ST Math Texas

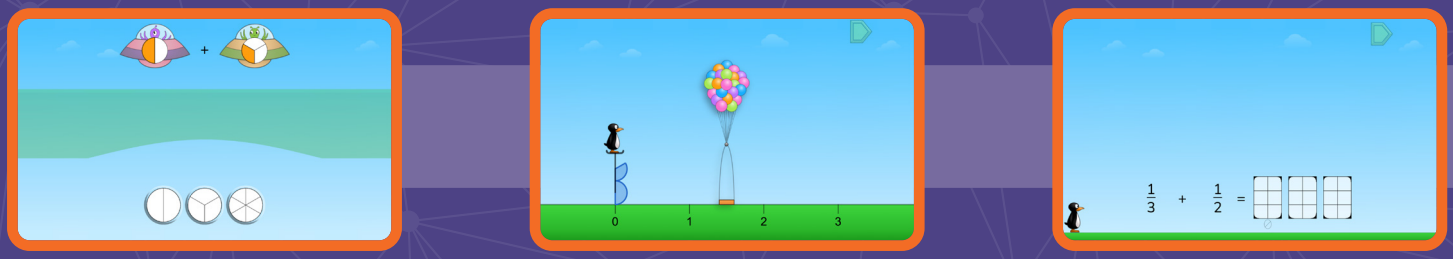
Grade 4

ST Math Practice Book

MIND EDUCATION

TEACHER EDITION

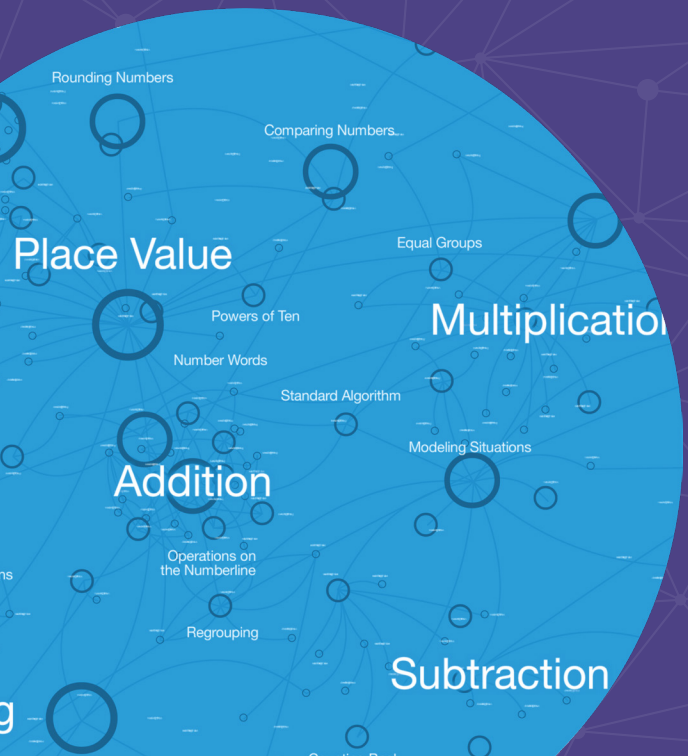
Building Mathematical Progressions Within and Across Grade Levels



Multiple models for every concept within a grade level

Visual-First Learning That Makes Math Click

ST Math Texas is built around a patented visual-first approach that helps students see and understand math. Interactive visuals activate students' spatial-temporal reasoning, building deep understanding even before introducing formal language or procedures.

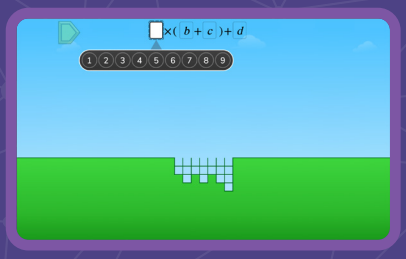


These scaffolded models support problem-solving, strategy sharing, and big-picture thinking—making math feel coherent and connected across and within grade levels.

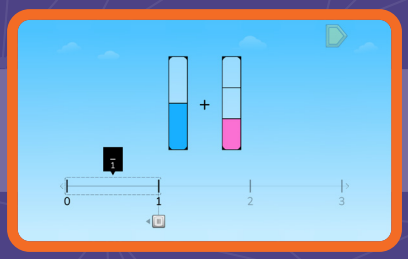
To deepen learning, lessons use multiple representations—visuals, numbers, words, and symbols—helping students form a rich network of ideas they can apply to new problems.

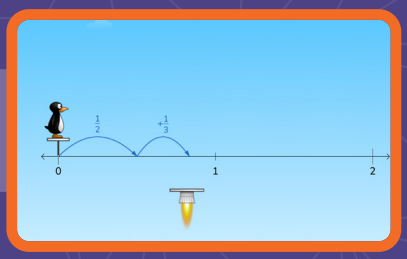
With **ST Math Texas** students go beyond memorization. They develop a connected understanding of math concepts, apply their learning flexibly, and build lasting confidence.

Expressions
Grade 5

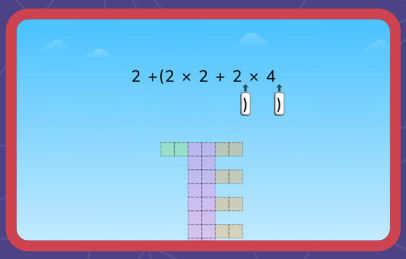


Fractions
Grade 4

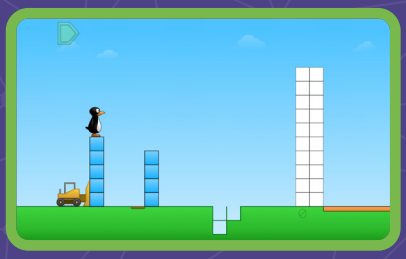




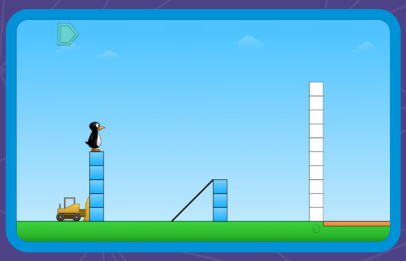
Multiplication
Grade 3



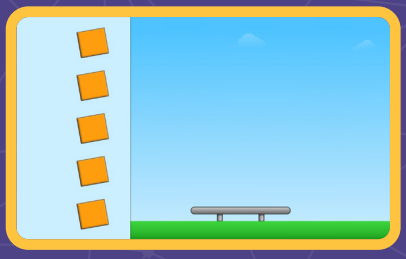
Subtraction
Grade 2



Addition
Grade 1



Counting
Grade K



Connected visual models build in complexity across grade levels

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How to Use This Document

This practice book is a standards-based, year long practice book companion to ST Math Texas.

To use this book in conjunction with ST Math Texas, find the digital games and objectives tied to each Topic. The hyperlinks will take you to the page that allows you to assign the ST Math Texas Objectives that go along with these practice pages.

These pages are designed to be printed and solved with paper and pencil. They come with spiral review, related topics and problems, and world problems that connect to the world around us.

Our help site offers further ties between ST Math, this practice book, and your school or district's curriculum.

Content Overview

Students enter grade 4 with an existing schema of multiplication as the mathematics of equal groups. They extend that schema in **Topic 1 (Exploring Multiplicative Relationships)** to generate a more robust concept of multiplicative relationships as they explore factors, multiples, and input-output tables. They begin to explore division situations with remainders and interpret remainders in context. **Topic 2 (Discovering Multiplicative Comparison)** extends students' multiplication schemas further to include situations involving multiplicative comparison. Students develop their language skills related to these situations, and apply understanding of multiplicative relationships to convert between customary topicsof measurement.

In **Topic 3 (Extending Place Value and Adding and Subtracting Efficiently)**, students generalize place value reasoning, making use of periodicity to work with numbers up to one billion. They describe place value relationships as multiplicative comparisons and use place value reasoning to compare, add, and subtract multidigit numbers. In **Topic 4 (Extending Multiplication to Multidigit Whole Numbers)** and **Topic 5 (Building Division Strategies)**, students connect place value reasoning to their understanding of factors and multiples to generalize multiplication and division strategies, and then extend those strategies in **Topic 6 (Extending Division Strategies)**.

The next pair of topics focus on fractions. Students begin **Topic 7 (Extending Addition and Subtraction to Fractions)** by extending their fraction schema to include numbers greater than 1, and to express them in different but equivalent ways including fractions, whole numbers, and mixed numbers. They continue to think of Topic fractions as they do other topics, and build understanding that fractions can be added or subtracted when they are expressed with common Topic fractions. In **Topic 8 (Exploring Fraction Thinking and Discovering Decimals)** extend their understanding of equivalence to represent numbers as equivalent fractions and as decimals and explore ways to generate these equivalent forms and compare numbers.

In **Topic 9 (Extending Financial Literacy)**, students use money contexts to support understanding of addition and subtraction of decimals. They explore thinking of decimals as fractions and to extend whole number place value reasoning to decimals, and see that both of these are legitimate ways to think about adding and subtracting decimals. Students have the opportunity to further practice adding and subtracting decimals as they learn about income, expenses, saving, and borrowing.

Students examine two-dimensional shapes and the relationships among their parts in **Topic 10 (Exploring Shapes, Lines, and Angles)** as they extend their classification system. **Topic 11 (Making**

Connections with Time and Data) offers students the opportunity to consolidate much of their learning as they problem solve with fractions, angles, multiples, and data representations in real-world situations.

Topic 1: Exploring Multiplicative Relationships

ST Math Objectives: Factors and Multiples, Generating Patterns, Multi-Digit Multiplication

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.4.C 4.4.D 4.4.E 4.4.F 4.4.H 4.5.A 4.5.B 4.5.C 4.5.D

ELPS: 2.A 2.B 2.C 2.D 2.E 2.F 3.B 3.H 4.A 4.B 4.C 4.E 4.F

Topic 2: Discovering Multiplicative Comparison

ST Math Objectives: Multi-Digit Multiplication, Applying Area and Perimeter, Factors and Multiples

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.4.B 4.4.D 4.4.H 4.5.A 4.5.B 4.8.A 4.8.B 4.8.C

ELPS: 1.E 2.A 2.B 2.E 2.F 3.B 3.C 3.E 3.F 3.G 3.H 4.A 4.B 4.C 4.E 4.F

Topic 3: Extending Place Value and Adding and Subtracting Efficiently

ST Math Objectives: Using Place Value, Addition and Subtraction Algorithm, Rounding Whole Numbers

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.2.A 4.2.B 4.2.C 4.2.D 4.4.A 4.4.B 4.4.G 4.5.A 4.8.A 4.8.B 4.8.C 4.9.A 4.9.B

ELPS: 1.B 1.C 1.D 1.E 1.F 2.B 2.C 2.D 2.E 2.F 3.A 3.C 3.D 3.E 3.F 3.G 3.H 4.A 4.B 4.C 4.D 4.E 4.F

Topic 4: Extending Multiplication to Multidigit Whole Numbers

ST Math Objectives: Multi-Digit Multiplication, Factors and Multiples, Generating Patterns

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.2.A 4.4.B 4.4.C 4.4.D 4.4.G 4.4.H 4.5.A 4.5.C 4.5.D 4.8.C

ELPS: 1.C 1.E 2.B 2.C 2.D 2.E 2.F 3.A 3.E 3.F 3.G 3.H 4.A 4.B 4.C 4.E 4.F

Topic 5: Building Division Strategies

ST Math Objectives: Multi-Digit Division, Factors and Multiples, Multi-Step Problems Using 4 Operations

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.2.A 4.4.B 4.4.E 4.4.F 4.4.H 4.5.A 4.5.B 4.5.D

ELPS: 1.C 1.E 2.B 2.C 2.E 2.F 3.E 3.F 3.G 3.H 4.A 4.B 4.C 4.E 4.F

Topic 6: Extending Division Strategies

ST Math Objectives: Multi-Digit Division, Multi-Step Problems Using 4 Operations, Factors and Multiples

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.4.B 4.4.C 4.4.D 4.4.E 4.4.F 4.4.H 4.5.A 4.5.B

ELPS: 1.A 2.A 2.C 2.D 3.A 3.E 3.H 4.A 4.B 4.C 4.D 4.E 4.F

Topic 7: Extending Addition and Subtraction to Fractions

ST Math Objectives: Adding and Subtracting Fractions, Mixed Numbers, Fractions - Equivalence and Ordering

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.3.A 4.3.B 4.3.C 4.3.E 4.3.F 4.3.G 4.9.A 4.9.B

ELPS: 1.B 1.C 2.A 2.B 2.E 2.F 3.A 3.B 3.C 3.F 3.G 3.H 4.A 4.B 4.C 4.E 4.F

Topic 8: Exploring Fraction Thinking and Discovering Decimals

ST Math Objectives: Fractions - Equivalence and Ordering, Fraction and Decimal Equivalence, Mixed Numbers

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.2.A 4.2.B 4.2.E 4.2.F 4.2.G 4.2.H 4.3.C 4.3.D 4.3.F 4.3.G 4.8.B

ELPS: 1.C 1.E 2.A 2.B 2.C 2.D 2.E 2.F 3.A 3.F 3.H 4.A 4.B 4.C 4.E 4.F

Topic 9: Extending Financial Literacy

ST Math Objectives: Decimal Addition and Subtraction, Comparing Decimals, Fraction and Decimal Equivalence

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.10.A 4.10.B 4.10.C 4.10.D 4.10.E 4.2.A 4.2.B 4.2.E 4.2.F 4.2.G 4.3.C 4.3.D 4.4.A 4.5.A 4.5.B 4.8.C 4.9.A 4.9.B

ELPS: 1.E 1.F 2.A 2.B 2.D 2.E 2.F 3.A 3.B 3.C 3.F 3.G 3.H 4.A 4.B 4.C 4.D 4.E 4.F

Topic 10: Exploring Shapes, Lines, and Angles

ST Math Objectives: Lines and Angles, Classifying Shapes, Lines of Symmetry

TEKS: 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.6.A 4.6.B 4.6.C 4.6.D 4.7.A 4.7.B 4.7.C 4.7.D 4.7.E 5.1.E

ELPS: 1.A 1.B 1.D 1.E 2.B 2.E 3.D 3.H 4.A 4.B 4.C 4.E 4.F

Topic 11: Making Connections with Time and Data

ST Math Objectives: Measurement and Conversions, Dot Plots, Multi-Step Addition and Subtraction Problems

TEKS: 4.1.A 4.1.B 4.1.C 4.1.D 4.1.E 4.1.F 4.1.G 4.2.F 4.2.G 4.3.C 4.4.D 4.4.H 4.7.A 4.7.B 4.7.C 4.7.D 4.8.C

ELPS: 1.A 1.E 2.B 2.C 2.D 2.E 2.F 3.F 3.G 3.H 4.A 4.B 4.C 4.E 4.F

Topic 1

Exploring Multiplicative Relationships

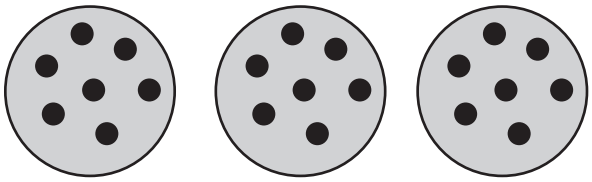
Recommended ST Math Objectives:

Factors and Multiples
Generating Patterns
Multi-Digit Multiplication

Name: Date:

Discovering Factor Pairs

1. Write an expression to match the drawing.

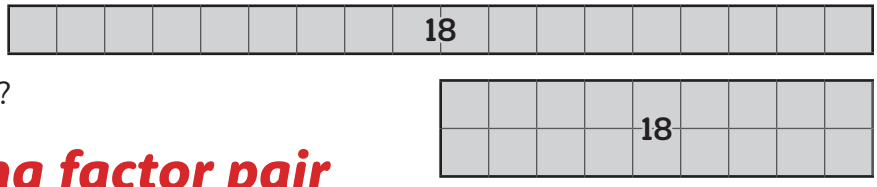


Possible answer:

3 × 7

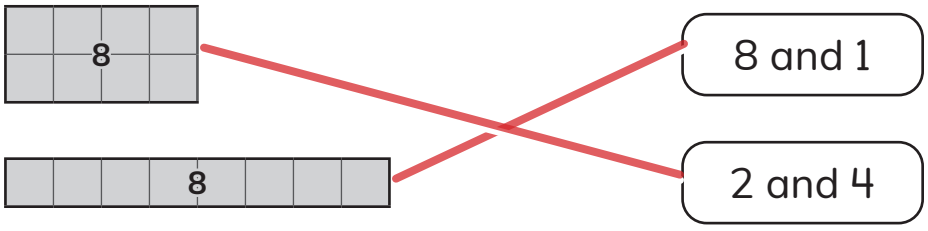
2. Solve. $764 + 236 =$ ***1,000***

3. Some of the factor pairs for 18 are shown. Which factor pair is missing?



The missing factor pair is 3 and 6.

4. Draw a line to match the rectangle to each factor pair.



5. The school office had 850 dot stickers to label file folders. They used 373 dot stickers on Monday. How many dot stickers did they have left? Explain your thinking.

477

Possible explanation:

I subtracted the number they used from the total to find how many are left.

Name: _____ Date: _____


Candace

Exploring Square Numbers

1. Use rounding to the nearest ten to answer these questions.

   a) What is the least number that will round to 60? **55**

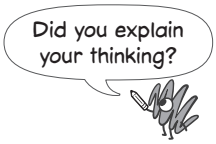
   b) What is the greatest number that will round to 60? **64**

2. 587 rounded to the nearest 100 is **600**.

3. Is 64 a square number? Explain your thinking.

   Yes

   Possible explanation:
   64 is a square number because 8 × 8 = 64.



4. a) What is the formula for the area of a rectangle?

   $A = l \times w$

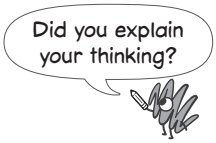
   b) Use the formula to find the area of a rectangular carpet that has a length of 8 feet and a width of 4 feet.

   8 × 4 = 32 square feet of carpet

5. At 3:20 p.m., Candace worked on chores at home after school. First, Candace cleaned the kitchen for 25 minutes. Then, she spent 4 minutes collecting and taking out the trash. Finally, Candace cleaned her bedroom for 51 minutes. At what time did Candace finish her chores? Explain your thinking.

   4:40 p.m.

   Possible explanation:
   3:20 p.m. + 25 minutes = 3:45 p.m.
   3:45 p.m. + 4 minutes = 3:49 p.m.
   3:49 p.m. + 51 minutes = 4:40 p.m.



Name: _____ Date: _____

Finding Dimensions of a Rectangle

1. Solve. $8 \times 8 =$ **64** $8 \times 80 =$ **640**

2. Solve. **171** $+ 643 = 814$

3. A rectangle has an area of 32 square inches. The width of the rectangle is 4 inches. What is the length of the rectangle?

   8 inches

4. A rectangle has an area of 25 square feet. The length of the rectangle is 5 feet. What is the width of the rectangle?

   5 feet

5. Lillian bought a recipe book for $12. Isaiah bought 3 of the same book for gifts. How much did Isaiah pay for his books? Explain your thinking.

   3 × $12 = $36

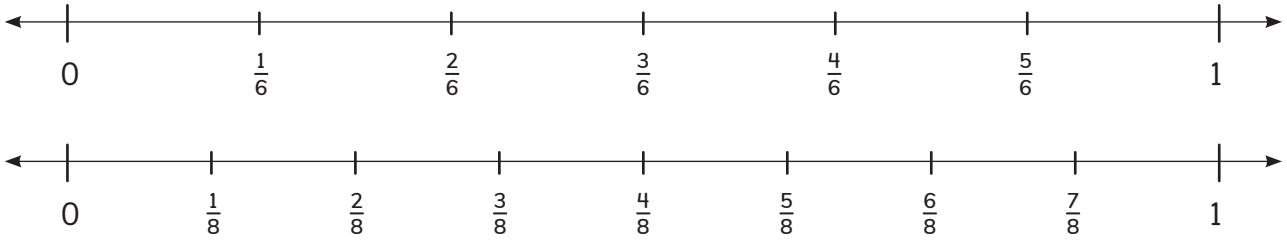
   Student explanations will vary.

Name: _____ Date: _____

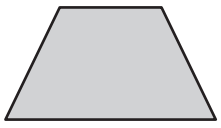

Finnie

Introducing Multiples

1 Use the number lines to find a pair of equivalent fractions. $\frac{3}{6}$ and $\frac{4}{8}$



2 Is this quadrilateral a trapezoid? **Yes** **No**



3 Fill in the missing multiples of 3.

3, 6, 9, 12, 15, 18, 21, 24, 27, 30

4 30 **is** / is not a multiple of 5 because *Possible answer:* *5 × 6 = 30*.

5 Finnie had 4 bags of small rocks in her rock collection. Each bag had 22 rocks inside. If Finnie gave 38 rocks to friends to start their own rock collections, how many rocks does Finnie have now? Show your thinking

50 rocks

Possible answer:

4 × 22 = 88 and 88 − 38 = 50

Name: Date:

Representing Patterns with Input–Output Tables

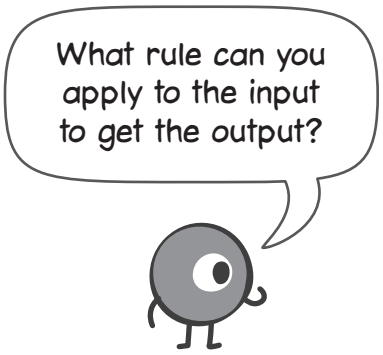
1. List the factor pairs for 24.

1 and 24, 2 and 12, 3 and 8, 4 and 6

2. Find the next 5 multiples of 9.

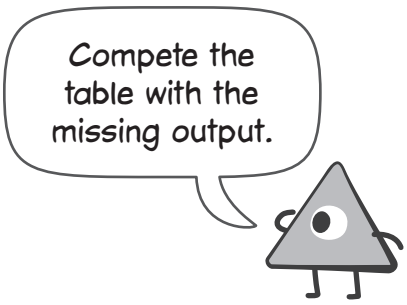
9, **18**, **27**, **36**, **45**, **54**

3.



Input	Output
7	21
9	27
15	45
32	**96**

Rule: × **3**



4. There were 128 people seated on the left side of an auditorium and 115 people seated on the right side. How many people were seated in the auditorium in total?

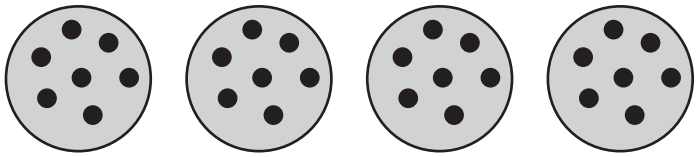
243 people

Name: _____ Date: _____


Candace

Exploring Patterns of Sequences

1



a) Write a multiplication equation to match the drawing.

Possible answer:

4 × 7 = 28

b) Write a division equation to match the drawing.

Possible answer:

28 ÷ 4 = 7

2 Will the product of 5 and 25 be odd or even? How do you know?

odd

Possible explanations:

I know that 5 × 5 = 25, so the 5 will be in the ones place, making the product an odd number. The product of 2 odd numbers will always be odd.

3 Will the product of 4 and 39 be odd or even? How do you know?

even

Possible explanations:

4 × 9 = 36, so the digit in the ones place is even. The product of an even number and an odd number will always be even.

4 Candace is riding her bike in her neighborhood looking at the numbers on the houses. The number on House 1 is 15. The number on House 2 is 18. The number on House 3 is 21. The next house numbers follow the same pattern. What will the number be on House 7? Did you show your thinking?

33

Possible explanation:

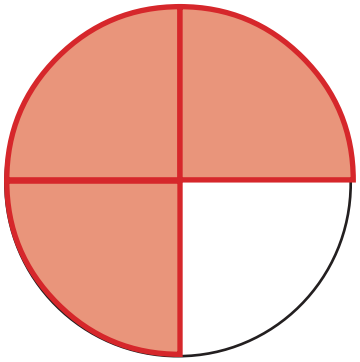
Each house number is 3 more than the number of the house before. Houses 4–7 have the numbers 24, 27, 30, and 33.

Name: _____ Date: _____

Representing Multiples Plus Some More


Isaiah

1 Partition the shape into fourths. Shade in $\frac{3}{4}$.



2 A 1 hour 30 minute movie started at 2:35 p.m. What time did the movie end?

4:05 p.m.

3 Is 48 a multiple of 9?

No

Student explanations will vary.

4 Complete the statements to make them true.

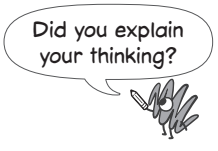
Possible answers:

21 is a multiple of 7.

48 is NOT a multiple of ***5***.

5 Isaiah is helping to set up 48 folding chairs in the gym. If he wants to make equal rows of chairs for the school play, how many different ways could he arrange the chairs? Which arrangement do you think would be best? Explain your thinking.

1 row of 48 or 48 rows of 1
2 rows of 24 or 24 rows of 2
3 rows of 16 or 16 rows of 3
4 rows of 12 or 12 rows of 4
6 rows of 8 or 8 rows of 6
Student explanations will vary.

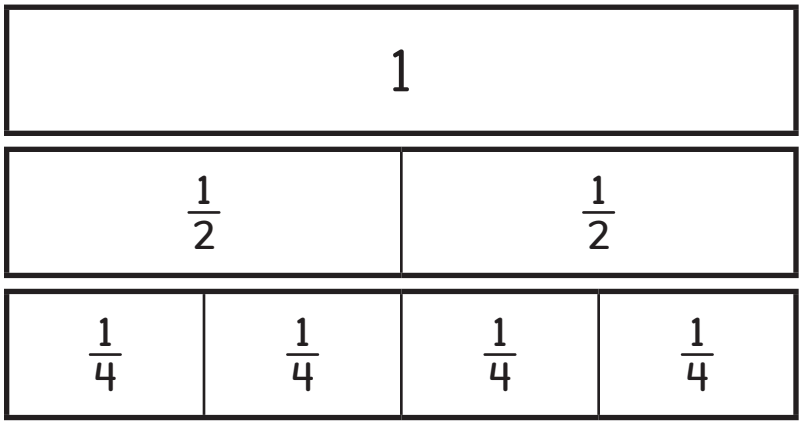


Name: _____ Date: _____


Dani

Using Multiples to Solve Problems

1. $\frac{1}{2} = \frac{2}{4}$



2. $1 = \frac{2}{2}$ or $\frac{4}{4}$

3. What numbers could you use to make the following equation true?

Possible answer:

$(3 \times 7) + 7 = 28$

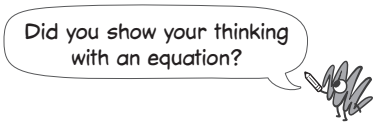
4. What number could you use to make the following inequality true?

$(6 \times 7) + 4 <$ Possible answers: 47, 48, 49, 50, or 51 $< (6 \times 8) + 4$

5. Dani had 8 boxes of tiles with 12 tiles in each box. She used 17 tiles in the hallway. How many tiles does Dani have left? Solve with an equation.

$(8 \times 12) - 17 = 79$

Dani has 79 tiles left.



Name: _____ Date: _____


Dani

Exploring Multiplication and Division Relationships

1. Solve. $673 - 339 =$ **334**

2. Dani collects 30 seashells. She wants to put all of them in bags. She puts 5 seashells in each bag. How many bags does Dani put seashells in?

   6

3. Dani has a board that is 56 inches long. She wants to make shelves that are 8 inches in length.

   a) Write an equation that can help Dani find the number of shelves she can build. Use a letter to represent the unknown amount.

   $56 \div 8 = s$

   b) Solve the equation.

   $s = 7$

4. Dani's teacher asked the fourth graders to draw a rectangle with an area of 24 square meters. When the teacher looked at the students' work, she saw that the students had drawn different rectangles that each had an area of 24 square meters. Draw 2 different rectangles Dani's class could have drawn and find the perimeter of one of the rectangles.

   Possible answer:

   a rectangle that measures 2 meters by 12 meters with a perimeter of 28 meters

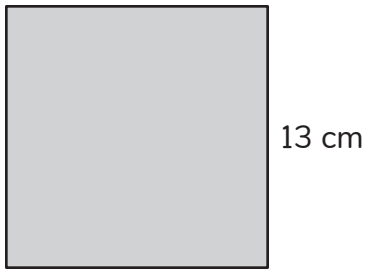
   a rectangle that measures 3 meters by 8 meters with a perimeter of 22 meters

Name: _____ Date: _____


Dani

Dividing with Remainders

1 a) Find the perimeter of the square. Show your thinking.



52 cm

Possible explanation:

13 × 4 = 52

b) Find the area of the square.

169 square cm

2 Will there be a remainder when finding the quotient of 42 ÷ 8? Explain your thinking.

Yes

Possible explanation:

5 × 8 = 40 and 6 × 8 = 48. The quotient of 42 ÷ 8 falls between these two multiplication facts.

3 Is 36 divisible by 9? Explain your thinking.

Yes

Possible explanation:

4 × 9 = 36, so 36 is divisible by 9.

4 Dani has 17 boards for her and her 2 friends to share equally for a project. How many boards does each person get for their project?

Possible answer:

Each person gets 5 boards.
There will be 2 boards left.

Name: _____ Date: _____


Candace

Interpreting Remainders

1. Which is the better estimate for the weight of an apple?

100 ounces or **100 pounds**

2. Solve. $7 \times 80 =$ ***560***

3. Candace's soccer team is taking vans to their next game. There are 28 players and each van can hold 6 players. Write an equation to show how many vans, v, will be needed.

28 ÷ 6 = v

4. Using your work from Problem 3, determine how many vans will be needed to take the team to the game.

28 ÷ 6 = 4 with a remainder of 4

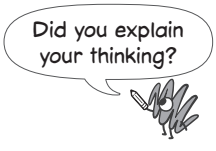
They will need 5 vans.

5. Candace needs at least 400 paper plates for the soccer cookout on Friday. She finds bags of paper plates in the supply closet. One bag has 97 plates, another bag has 111 plates, another bag has 102 plates, and the last bag has 78 plates. Estimate to determine if Candace will have enough plates. Explain your thinking.

Possible answer:

No

4 bags of 100 plates would give her 400. 2 bags have slightly more than 100, 1 bag has slightly less than 100, and 1 bag has much less than 100.



Name: _____ Date: _____

Solving Division Word Problems with Remainders


Candace

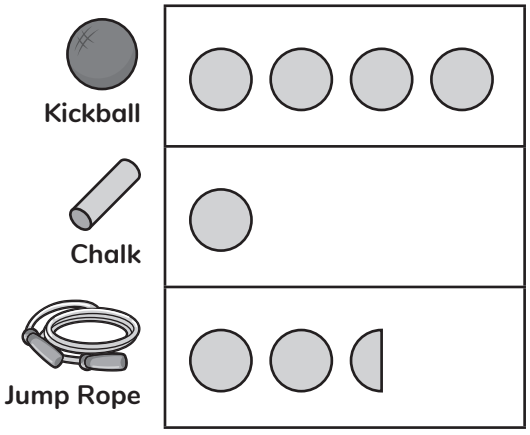
1 a) How many more students like kickball than those who like jumping rope?

6 more students

b) How many students were asked what activity they liked to do at recess?

30 students

Recess Activities Preferred by Students



Key: ● = 4 students

2 My number is a multiple of 3.
It is an even number.
My number is less than 30.
8 is a factor of my number.
Guess my number.

24

3 What shape is the 27th figure? Explain your thinking.

Triangle

Possible answer:

The symbols repeat in groups of 5, so the 25th symbol will be a rhombus, the 26th will be a circle, and the 27th will be a triangle.

4 Candace has 60 party favors. She wants to put an equal number of party favors in each bag. What are 4 different ways Candace could organize party favors into bags? Which way uses the fewest bags? Which way uses the most bags?

Possible answer:

30 bags with 2 party favors in each

15 bags with 4 party favors in each

20 bags with 3 party favors in each

6 bags with 10 party favors in each

Most bags: 60 bags with 1 party favor in each

Fewest bags: 1 bag with 60 party favors in each

Topic 2

Discovering Multiplicative Comparison

Recommended ST Math Objectives:

Multi-Digit Multiplication
Applying Area and Perimeter
Factors and Multiples

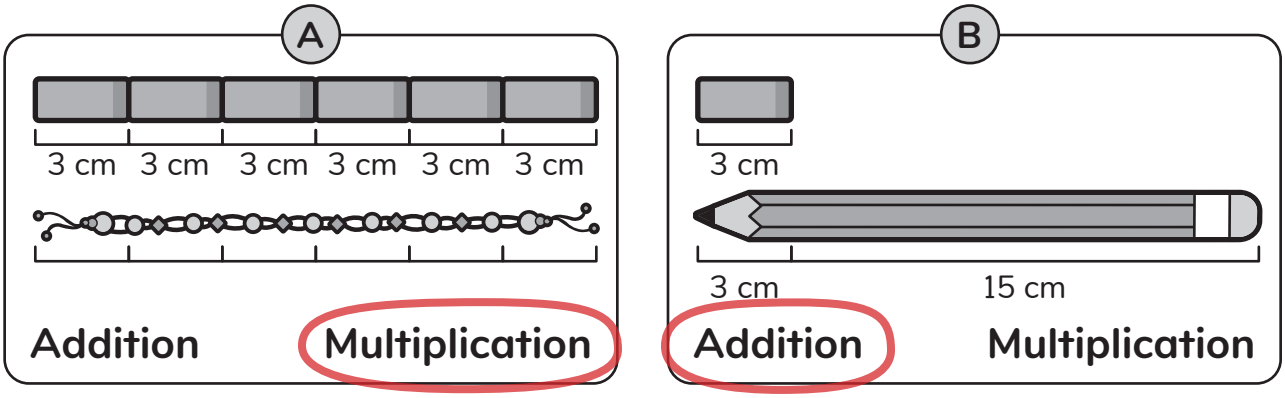
Name: Date:

Introducing Multiplicative Comparison

1. List the factor pairs for 36.

1 and 36, 2 and 18, 3 and 12, 4 and 9, 6 and 6

2. Circle the operation you would use to find the length of each object.



3. A cat's tail is 3 times as long as the tail of a mouse. If the length of a mouse's tail is 4 inches, how long is a cat's tail?

12 inches

4. Two friends want to have a party to celebrate the track season. They have 2 rolls of streamers to decorate for the party. One roll of streamers is 48 feet long. The other roll of streamers is 36 feet long. If they use 60 feet of streamers, how much is left over? Explain your thinking.

24 feet

Student explanations will vary.

Name: _____ Date: _____


Candace

Using Multiplicative Comparison to Solve Problems

1 Solve.

$9 \times 5 =$ **45** $8 \times 6 =$ **48** $7 \times 7 =$ **49**

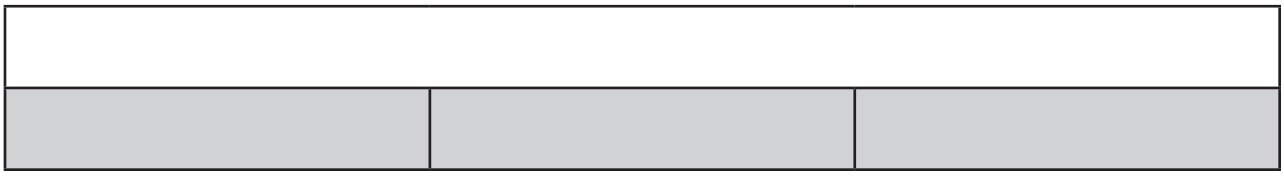
2 Will the product of 24 × 3 be odd or even? Explain your thinking.

even

Possible explanation:

The product will be even because one of the factors is even.
24 × 3 = 72

3



a) The ***white*** bar is ***3*** times as long as the ***gray*** bar.

b) If the white bar is 24 centimeters long, what is the length of each gray bar?

Possible answer:

8 cm, 24 ÷ 3 = 8

Show your thinking with an equation.

4 Candace is going to a professional soccer game and wants a new outfit. She bought sunglasses, jeans, and a T-shirt for $12 each. How much did Candace pay for the outfit? Show your thinking with an equation.

$36

Possible explanation:

$12 × 3 = $36

Did you explain your thinking?

Name: _____ Date: _____


Dani

Representing Multiplicative Comparison

1. A square garden has an area of 25 square feet. What is the length of each side?

5 feet

2. Solve. 549 + 287 = **836** 382 + 459 = **841**

3. a) **12** is 4 times as much as 3.

   b) **48** is 6 times as much as 8.

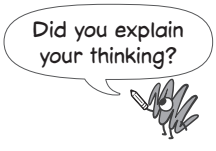
4. 7 kids like the swings at the park. 3 times as many kids like the climbing bars as like the swings. How many kids like the climbing bars?

21 kids

5. Dani and her older brother went to the hardware store to pick up supplies for some projects. Dani spent $7. Her older brother spent 9 times as much money as Dani. How much money did Dani's older brother spend? Explain your thinking.

$63

Student explanations will vary.



Name: _____ Date: _____

Exploring Multiplicative Comparison

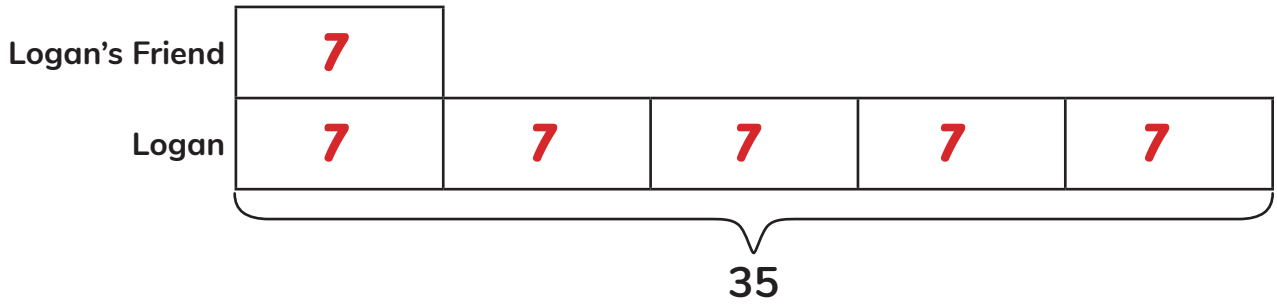
1. Complete the pattern by filling in the missing numbers.

8, **12**, 16, 20, 24, **28**, **32**

2. Fill in the missing multiples of 6.

6, 12, **18**, **24**, **30**, **36**, **42**, 48, **54**, **60**

3. Yesterday, Logan read 35 pages of her graphic novel. Her friend said that Logan read 5 times as many pages as he did. Complete the strip diagram to show how many pages Logan's friend read.



4. a) 54 is **6** times as much as 9.

b) 48 is **8** times as much as 6.

5. Dani and her older brother like to play video games together. On Monday, Dani scored 12 points and her older brother scored 72 points. How many times as many points did Dani's older brother score compared to her? Show your thinking.

6

Student models will vary.

Name: _____ Date: _____

Using Multiplicative Comparison to Find Unknowns

1. Solve. $48 \div 6 = \boxed{8}$ $27 \div 3 = \boxed{9}$

2. Solve. $7 = \boxed{42} \div 6$ $4 = \boxed{16} \div 4$

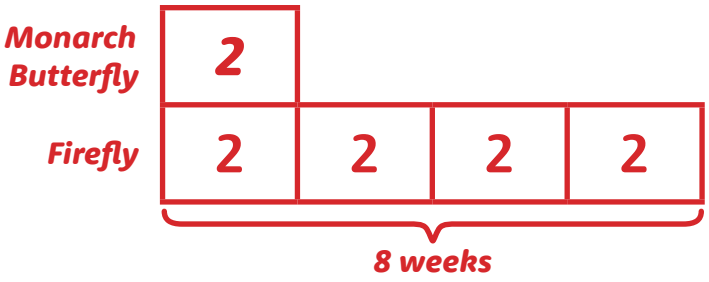
3. The lifespan of a carpenter ant is $\boxed{4}$ times the lifespan of a cabbage white butterfly.

	Lifespan
Cabbage White Butterfly 	21 days
Carpenter Ant 	84 days

4. Draw a strip diagram to show that the lifespan of a firefly is 4 times as long as the lifespan of a monarch butterfly.

	Lifespan
Monarch Butterfly 	2 weeks
Firefly 	8 weeks

Possible model:



5. Logan has 5 times as many stickers in her sticker book as Dani has in her sticker book. If Logan has 30 stickers, how many stickers does Dani have? Show your thinking.

Dani has 6 stickers.

Possible explanation:

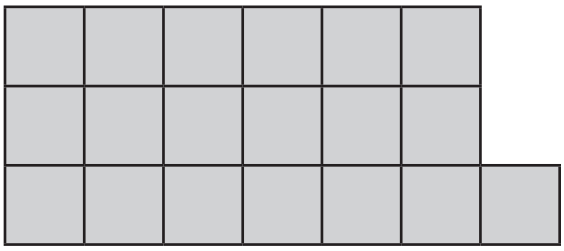
30 ÷ 5 = 6

Name: _____ Date: _____


Logan

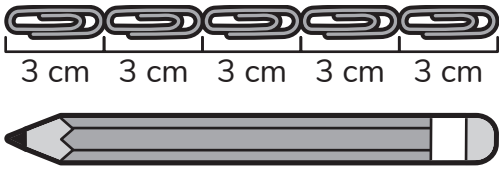
Representing Additive and Multiplicative Input-Output Relationships

1 Solve.



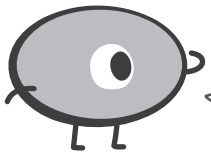
$19 \div 3 =$ **6** R **1**

2 Write an expression to represent the length of the pencil.



5 × 3

3



What rule shows how I can use the position number to find the value?

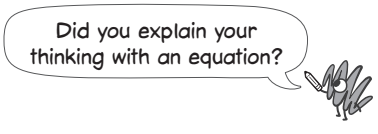
Complete the table.

Position	Value
1	10
2	11
3	12
43	**51**
65	**74**

Rule: **+** **9**

4 Logan surveyed her class to see if other kids like comic books and found out that 7 kids like comic books. She also found out that 3 times as many kids like mystery novels. How many kids like mystery novels? Write an equation to show how you know.

3 × 7 = 21 kids like mystery novels



Name: _____ Date: _____


Sarah

Converting Yards to Feet

1. Solve. $4 \times 6 =$ **24** $4 \times 60 =$ **240**

2. If **7** $\times 8 = 56$, then $56 \div 8 =$ **7**.

3. There are 3 feet in 1 yard. Find each measurement conversion.

   3 yards = **9** feet 6 yards = **18** feet

4. Sarah gardens in a planting bed that is 42 feet long. Her dad gardens in a planting bed that is 13 yards long. Which planting bed is longer?

   Sarah's planting bed is longer.

   Possible explanation:

   42 feet is longer because 13 yards × 3 feet = 39 feet.

5. Sarah needs 12 total yards of rope. One spool has 21 feet of rope. Another spool has 12 feet of rope. Does she have enough rope? Explain your thinking.

   No

   12 yards is 12 × 3 = 36 feet. She has 12 + 21 = 33 feet of rope, so she needs 3 more feet.

Name: _____ Date: _____

Converting Between Customary Length Measurements

1. List all the factor pairs for 24.

1 and 24, 2 and 12, 3 and 8, 4 and 6

2. Write the number in expanded notation.

863,241

(8 × 100,000) + (6 × 10,000) + (3 × 1,000) + (2 × 100) + (4 × 10) + (1 × 1)

3. There are 12 inches in a foot. Find each measurement conversion.

4 feet = ***48*** inches

7 feet = ***84*** inches

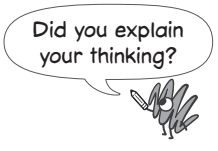
5 feet = ***60*** inches

4. A roll of string is 72 inches long. If 2 necklaces are made that each use 1 foot of string, how much string is left? Explain your thinking.

48 inches

Possible explanation:

2 feet of string is 2 × 12 inches = 24 inches.
72 – 24 = 48



Name: _____ Date: _____

Solving Problems with Customary Length Conversions

1. Write the number in expanded notation.

   703,050

   (7× 100,000) + (3 × 1,000) + (5 × 10)

2. Solve. 604 – 348 = ***256*** 783 – 596 = ***187***

3. Candace's bed is 75 inches long. Her blanket is 7 feet long. How much longer is her blanket than her bed?

   Explain your thinking.

   9 inches longer

   Possible explanation:

   7 × 12 = 84 and 84 – 75 = 9

4. Use < , = , or > to compare.

   5'8" ***>*** 64" 54" ***=*** 4'6"

5. Louis needs 72 inches of extension cord to be able to set up his video game system. His stepdad buys him an extension cord that is 6 feet long. Does Louis have a long enough cord? Explain your thinking.

   Yes

   Possible explanation:

   72 ÷ 12 = 6

Did you explain your thinking?

Name: _____ Date: _____


Logan

Converting Between Pounds and Ounces

1 Solve.

$24 \div 4 =$ **6** $\quad 45 \div 5 =$ **9** $\quad 54 \div 6 =$ **9**

2 A school collected cans for a food drive. Each of the 7 classrooms collected 30 cans. How many cans did the school collect for the food drive?

210 cans

3 Complete the chart.

Pounds	Ounces
1	16
2	**32**
3	**48**
4	**64**

4 Use < , = , or > to compare.

2 lb 3 oz **>** 29 ounces

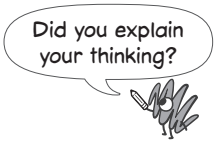
52 ounces **<** 3 lb 15 oz

5 Logan's dad bought 5 pounds of potatoes so they could make mashed potatoes together. How many ounces of potatoes did he buy? Explain your thinking.

80 ounces

Possible explanation:

There are 16 ounces in 1 pound, and 5 × 16 ounces = 80 ounces.



Name: Date:

Converting Between Customary Units of Liquid Volume

1. What are all of the possible lengths and widths that a rectangle could be if the area is 36 square inches?

1 inch by 36 inches
2 inches by 18 inches
3 inches by 12 inches
4 inches by 9 inches
6 inches by 6 inches

2. The area of a rectangle is 24 square inches. The length of the rectangle is 6 inches. What is the width?

4 inches

3. Use < , = , or > to compare.

1 cup = 8 fl oz
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

3 pints **>** 12 fluid ounces

4 cups **=** 1 quart

8 pints **=** 1 gallon

4. A recipe calls for 18 fluid ounces of buttermilk. There is 1 pint of buttermilk in the refrigerator. Is there enough to make the recipe? Explain your thinking.

No

Possible explanation:

1 pint is 16 fluid ounces, which is 2 ounces less than needed.

5. A pet store has different-sized aquariums for fish. One aquarium holds 32 quarts of water. How many gallons does this aquarium hold? Explain your thinking.

8 gallons

Possible explanation:

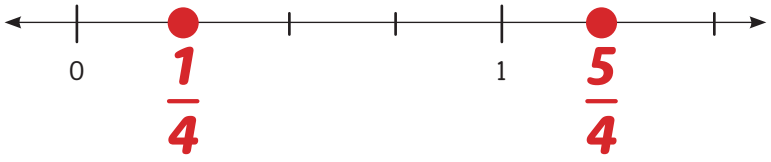
32 ÷ 4 = 8

Name: _____ Date: _____


Logan

Converting Units to Solve Problems

1. Plot $\frac{1}{4}$ and $\frac{5}{4}$ on the number line.



2. Solve. $743 + 195 =$ **938** $261 + 692 =$ **953**

3. Use $<$, $=$, or $>$ to compare.

1 pound = 16 ounces

3 lb 8 oz **>** 40 oz

38 oz **=** 2 lb 6 oz

4. Finish each statement.

14 is **7** times as much as 2.

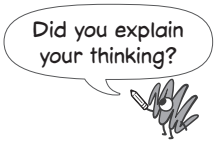
72 is 8 times as much as 9.

5. Logan's track club went to the bowling alley to celebrate the track season. Logan used a bowling ball that weighed 9 pounds. What was the weight of her bowling ball in ounces? Explain your thinking.

144 ounces

Possible explanation:

9 pounds equals 144 ounces because 9 × 16 = 144.



Name: Date:


Logan

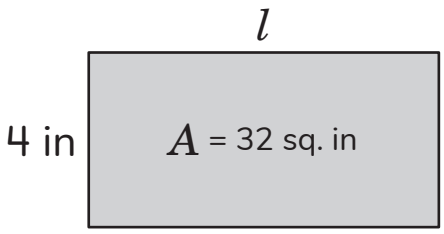
Solving Problems with Mixed Customary Measurement Units

1 Solve.

850 – 392 = **392**

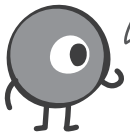
227 + 581 = **808**

2 What is the length of the rectangle?



l = **8 in**

3



1 pound = 16 ounces

I have 2 bags. The first bag weighs 7 pounds 9 ounces. The second bag weighs 5 pounds 14 ounces.

What is the difference in weight between the 2 bags in pounds and ounces?

1 pound 11 ounces

4 Logan had some money. She bought items that cost a total of $42 and got $8 back in change. How much money did Logan start with?

$50

Topic 3

Extending Place Value and Adding and Subtracting Efficiently

Recommended ST Math Objectives:

Using Place Value
Addition and Subtraction Algorithm
Rounding Whole Numbers

Name: _____ Date: _____

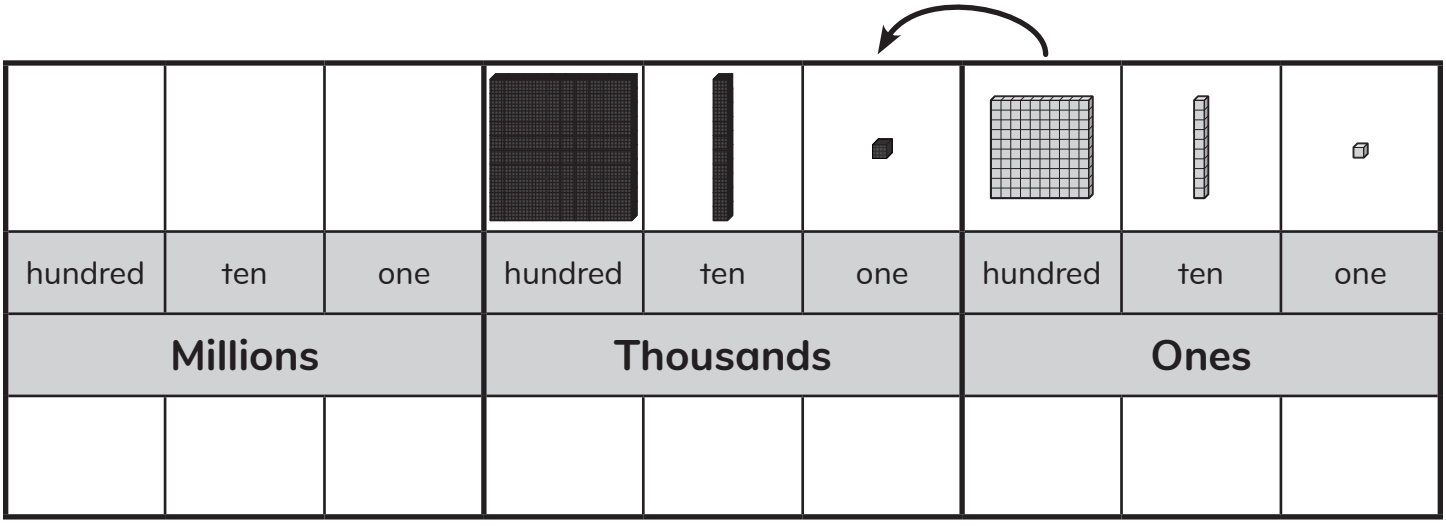

Sarah

Exploring Multiplication Relationships Between Place Values

1. 42 is **7** times as much as 6.

2. Solve. **9** × 8 = 72 48 ÷ **8** = 6

3. Complete the relationship of these place values.



hundred	ten	one	hundred	ten	one	hundred	ten	one
Millions			**Thousands**			**Ones**		

a) 1 thousand is **10 times** as much as 1 hundred.

b) 1,000 = **10** × 100

4. 100 million is 10 times as much as what number? **10,000,000**

5. Sarah's teacher asked her class to write a 5-digit number. Sarah wrote 15,284.
Write another number in which the 5 has 10 times the value of the 5 in Sarah's number.
Explain your thinking.

Correct answers will have a 5 in the ten thousands place.

Possible answer:
51,284.

Student explanations will vary.

Name: _____ Date: _____


Candace

Exploring Multiplication and Division Relationships Between Place Values

1. What is a related multiplication fact for 35 ÷ 7 = 5?

   5 × 7 = 35

   or 7 × 5 = 35

2. A lap around the block is 2 miles. The trail around the lake is 6 times as long as the lap around the block. How long is the trail around the lake?

   12 miles

3. Complete each statement.

   1,000 is [one tenth / ten times] as much as 10,000.

   1,000,000,000 is [one tenth / ten times] as much as 100,000,000.

4. Candace scored 7,000 points in a soccer video game. If Candace scored 10 times as many points as her dad, how many points did her dad score? Explain your thinking.

   700

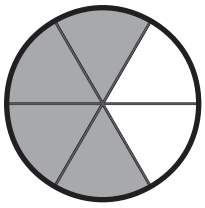
   Student explanations will vary.

Name: _____ Date: _____

Representing Large Numbers


Candace

1. What fraction of the circle is shaded?



4/6 or 2/3

2. Soccer practice started at 2:25 p.m. It lasted 90 minutes. What time was practice over?

3:55 p.m.

3. Write the number in standard form.

$(3 \times 10{,}000) + (4 \times 1{,}000) + (7 \times 100) + (8 \times 1)$

34,708

4. Write the number in expanded notation.

ten million thirty-six thousand four hundred twenty-two

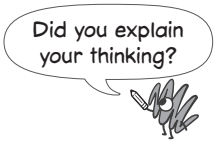
(1 × 10,000,000) + (3 × 10,000) + (6 × 1,000) + (4 × 100) + (2 × 10) + (2 × 1)

5. Candace wrote the number 29,037 in expanded notation. She wrote $(2 \times 10{,}000) + (9 \times 1{,}000) + (3 \times 100) + (7 \times 1)$. Is Candace correct? Explain your thinking.

No

Possible explanation:

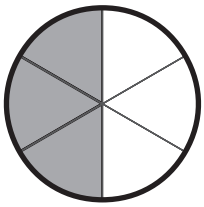
The number 3 should be multiplied by 10, not by 100, in expanded notation.



Name: Date:

Multiplying and Dividing by 10, 100, and 1,000

1. Use the model to write the fraction.



$\frac{3}{6} = \frac{1}{2}$

2. Complete the table.

Inches	12	24	36	48	60
Feet	1	2	3	4	5

3. Solve.

$17{,}000 \div 1 =$ 17,000 $\quad 17{,}000 \div 10 =$ 1,700

$17{,}000 \div 100 =$ 170

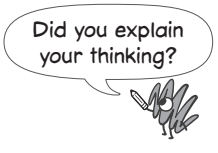
4. Solve.

$26 \times 1{,}000 =$ 26,000 $\quad 26 \times 10{,}000 =$ 260,000

5. Two friends counted 346 shells on the beach. They estimated there were 100 times as many shells in the tide pools as on the beach. How many shells did they estimate were in the tide pools? Explain your thinking.

34,600 shells

Student explanations will vary.



Name: _____ Date: _____

Converting Metric Units

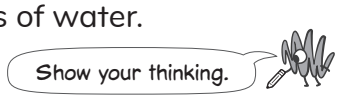
1 Complete each measurement conversion.

1 yard = **3** feet 1 foot = **12** inches

2 Logan got a new graphic novel. She read 7 pages on Sunday. Her dad challenged her to read 7 times as many pages by Friday. How many pages does Logan need to read to complete the challenge?

49 pages

3 Naomi got a new tank for her hermit crab. This tank holds 42 liters of water. How many milliliters of water does the tank hold?



42,000 mL

Student explanations will vary.

1 liter = 1,000 milliliters
1 meter = 1,000 millimeters

4 Use < , = , or > to compare. 5,000 millimeters **<** 50 meters

5 On a race day, Logan drinks 2,000 mL of water. How many liters does Logan drink? Explain your thinking.

2 L

Possible answer:

2 × 1,000 = 2,000

Name: Date:

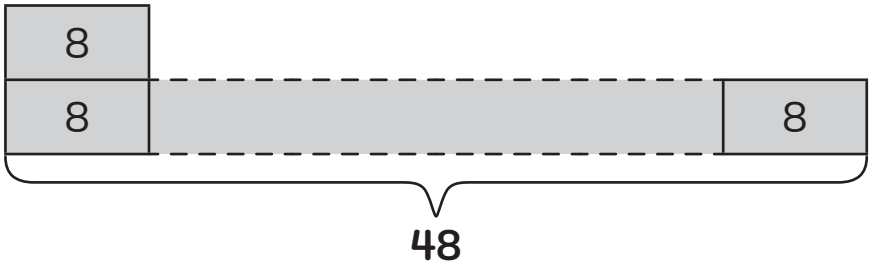
Estimating and Converting Metric Units of Mass

1. Circle all the ways to describe the number 32.

multiple of 3 | **multiple of 2** | square number

even | **divisible by 4** | odd

2. Write a multiplication equation to represent the strip diagram. Use a letter for the unknown.



$8 \times a = 48$

3. 28 kg = **28,000** g

345,000 g = **345** kg

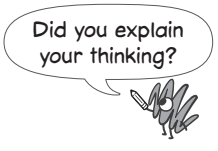
1 kilogram (kg) = 1,000 grams (g)

4. There are 30 stickers to be shared equally among 4 students.
How many stickers will be left over? Explain how you know.

2 stickers

Possible explanation:

$30 \div 4 = 7\ R2$



Name: _____ Date: _____


Naomi

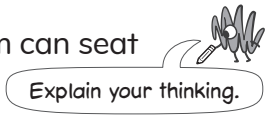
Comparing Large Numbers

1 Complete each statement.

558 rounded to the nearest 10 is **560**.

558 rounded to the nearest 100 is **600**.

2 There are 33 students in a fourth-grade class. Each table in the classroom can seat 4 students. How many tables will they need so each student has a seat?



9 tables

33 ÷ 4 = 8 R1, so they will need 9 tables.

3 Use < , = , or > to compare.

2,403,971 **>** 2,304,971 5,008,981 **<** 5,009,980

4 Write a digit that will make the inequality true.

423,628 < 4 ☐ 3,628

3, 4, 5, 6, 7, 8, or 9

3 ☐ 4,570 < 334,570

0, 1, or 2

5 Naomi was born in a city with a population of 913,175. Naomi's sister was born in a city with a population of 985,843. Who was born in the city with the greater population? Compare the population of each city using < , > , or = .

913,175 < 985,843 or 985,843 > 913,175

Naomi's sister

Name: _____ Date: _____

Rounding Large Numbers

1. Solve. $600 - 429 =$ **171**

2. Complete the table.

Ounces	16	32	48	64	80
Pounds	1	2	3	4	5

3. If this number rounds to 180,000, what digit might be under the ●?

18●403

Possible answers:
0, 1, 2, 3, or 4

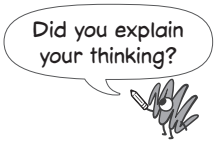
4. a) Round 534,496 to the nearest hundred thousand. **500,000**

   b) Round 534,496 to the nearest ten thousand. **530,000**

5. An online store receives 843 orders for key chains. The website fills 455 orders. How many orders does the website still have to fill? Show your thinking.

388 orders

Possible explanation:
843 – 455 = 388



Name: Date:

Reasoning with Large Numbers to Solve Problems

1. Solve.

$6 \times 9 =$ **54** $3 \times 7 =$ **21** $5 \times 5 =$ **25**

2. What happens when a number is multiplied by 0?

Possible answer:

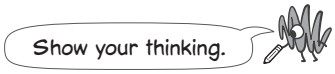
When you multiply any number by 0, the answer is 0.

3. Write the number in standard form.

$(5 \times 1{,}000) + (1 \times 100) + (1 \times 10) + (8 \times 1)$

5,118

4. There are 1,000 grams in a kilogram. Circle the bag of trash that has the greater mass.



Student work will vary.

5. The city needs 24,533 flyers announcing the citywide Clean Beach event. If the flyers are printed in batches of 1,000, how many batches of flyers should the city request? Show your thinking.

25 batches

Student work will vary.

Name: _____ Date: _____


Hannah

Creating Stem-and-Leaf Plots

1 Complete each statement.

5,000 is one tenth as much as **50,000**.

3,000 is 10 times as much as 300.

2 Complete the inequalities.

85,291,357 < **Student answers will vary.**

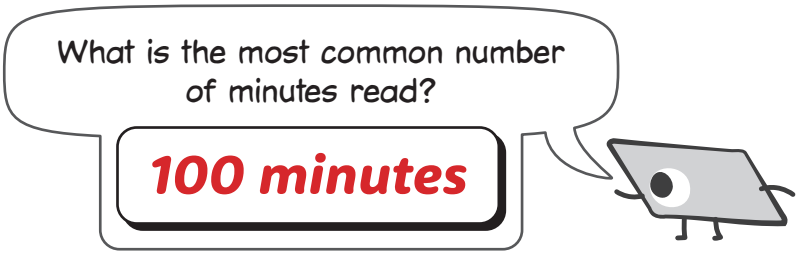
39,857 **<** 300,132

3

Number of Minutes Students Read Last Week

Stem	Leaf
7	0 4 5 5 7 9
8	2 5 7
9	6
10	0 0 0 3 5 8
11	1 3 4 6 6

7|4 means 74 minutes.



4 Hannah read 48 pages of her book on Monday and 12 pages of her book on Tuesday. Which statements describe how much Hannah read on Monday and Tuesday?

a) **Hannah read 4 times as much of her book on Tuesday as on Monday.**

b) **Hannah read 4 times as much of her book on Monday as on Tuesday.**

c) **Hannah read 36 fewer pages on Tuesday than on Monday.**

d) **Hannah read 60 more pages on Monday than on Tuesday.**

Name: _____ Date: _____


Hannah

Interpreting Data with Stem-and-Leaf Plots

1 Complete the statements to make them true.

27,120 is about **3** 0 , 0 0 0.

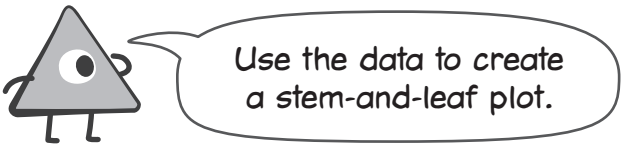
638,593 is about 6 **4** 0 , 0 0 0.

2 Complete the comparison statement.

56 is **7** times as much as 8.

3 The following list shows the students' completion times of the obstacle course.

60, 53, 37, 41, 78, 50, 49, 87, 46, 65, 61, 60, 38



How many fewer students completed the obstacle course in less than 50 seconds than in 50 seconds or more?

3 fewer students

Number of Seconds It Took Students to Complete the Obstacle Course

Stem	Leaf
3	7 8
4	1 6 9
5	0 3
6	0 0 1 5
7	8
8	7

4|1 means 41 seconds.

4 The sack race course is 12' long. The long jump pit is 96" long. How much longer is the sack race course than the long jump pit?

1 foot = 12 inches

4 feet

Name: _____ Date: _____


Logan

Adding and Subtracting Large Numbers on an Open Number Line

1. What are 2 different names for this shape?

Possible answer:

rectangle, quadrilateral

2. Logan ran a race at school. She ran 4 laps. Her dad challenged her to run 6 times as many laps over the weekend. How many laps would Logan have to run to complete the challenge?

24 laps

3. Use the number line to find the sum of 876 + 2,434.

3,310

Student work will vary.

4. Use the number line to find the difference of 4,206 – 1,892.

2,314

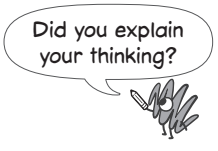
Student work will vary.

5. Volunteers at the beach cleanup picked up 1,118 aluminum cans in the first hour and 1,074 aluminum cans in the second hour. How many total aluminum cans were picked up at the beach cleanup? Explain your thinking.

2,192 aluminum cans

Possible explanation:

1,118 + 1,074 = 2,192

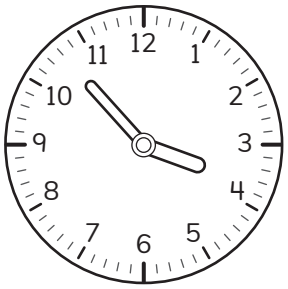


Name: _____ Date: _____


Hannah

Estimating Sums and Differences of Large Numbers

1 What time does the clock show?



3 : **53**

2 A square has a side length of 8 inches. What is the area of the square?

64 square inches

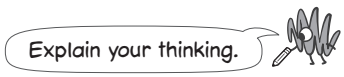
3 a) Round each addend to the nearest hundred and estimate the sum. **1,962 + 947**

2,900 is the estimate.

b) Round each addend to the nearest ten and estimate the sum. **1,962 + 947**

2,910 is the estimate.

c) Will rounding to the nearest hundred or rounding to the nearest ten give an estimate closer to the actual sum?



Rounding to the nearest ten gives an estimate closer to the actual sum.
Student explanations will vary.

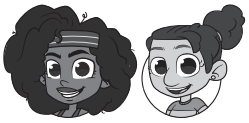
4 Hannah and her dad went on a road trip! They drove 1,182 miles from New York, New York, to Orlando, Florida. Then they drove 963 miles to Houston, Texas. They finally drove 1,545 miles to Los Angeles, California. Round each distance to the nearest thousand, and then estimate the total number of miles Hannah and her dad traveled. Explain your thinking.

Possible answer:

4,000 miles

1,182 and 963 both round to 1,000, and 1,545 rounds to 2,000.
1,000 + 1,000 + 2,000 = 4,000

Name: _____ Date: _____



Modeling and Solving Addition and Subtraction of Large Numbers

1 Solve.

$8 \times 3 =$ **24** $\quad 9 \times 6 =$ **54** $\quad 7 \times 8 =$ **56**

2 Logan and her dad went to a track-and-field competition together. She threw the shot put 11 feet. Her dad threw the shot put 3 yards. Who threw the shot put farther?

Logan

3 Using the partial sums strategy, find each sum.

	3,	4	8	6
+		6	5	5
			1	1
		1	3	0
	1,	0	0	0
+	3,	0	0	0
	4,	1	4	1

	6,	0	2	9
+	2,	5	1	7
			1	6
			3	0
		5	0	0
+	8,	0	0	0
	8,	5	4	6

4 Hannah and her dad harvested 9,688 pounds of corn from their farm this year. They harvested 8,932 pounds of corn last year. How many total pounds of corn has Hannah's family harvested in the last 2 years? Show your thinking.

18,620 pounds

Student explanations will vary.

Name: _____ Date: _____


Naomi

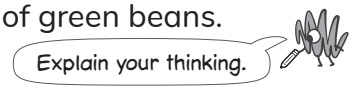
Adding and Subtracting Large Numbers Without Regrouping

1 Complete each statement.

40 is 5 times as much as 8.

48 is 8 times as much as **6**.

2 A recipe calls for 2 pounds of green beans. A bag has 30 ounces of green beans. Are there enough green beans to make the recipe?



No

Possible explanation:

You would need 32 ounces to have 2 pounds.

3 a) Estimate the sum of 719 + 275.

Possible answer:

1,000

b) Solve without using partial sums.

$$\begin{array}{r} 719 \\ +\ 270 \\ \hline 989 \end{array}$$

4 Naomi used the partial sum strategy to determine the number of visitors the city aquarium had one weekend. There were 2,689 visitors on Saturday and 3,078 visitors on Sunday. How many total visitors went to the aquarium that weekend? Explain your thinking.

5,767 visitors

Student explanations will vary.

Name: _____ Date: _____


Hannah

Adding Large Numbers with Regrouping

1. What multiplication equation could be used to find the quotient of 56 ÷ 7?

Possible answer:

7 × 8 = 56

2. The owners of a concession stand ordered hot dogs for the game. Hot dogs come in packages of 8. The owners ordered 30 packages of hot dogs. They need to make sure they have enough hot dog buns. Buns come in packages of 10. How many packages of hot dog buns do they need to order? Show your thinking.

24 packages

Possible explanation:

30 × 8 = 240 hot dogs
240 ÷ 10 = 24 packages of buns

3. a) Estimate the sum of 873 + 459.

Possible answer:

1,400

b) Use the standard algorithm to find the sum of 873 + 459.

```
  1 1
 873
+ 459
-----
1,332
```

4. Hannah looked at how many hits her favorite baseball team had in the last 2 years. In the first year, the team had 1,236 hits. In the second year, the team had 995 hits. How many hits did Hannah's favorite team have during the past 2 years? Show your thinking.

2,231 hits

Student work will vary.

Did you show your thinking?

Name: _____ Date: _____


Hannah

Subtracting Large Numbers with Regrouping

1. Write the factor pairs for 48.

1 and 48, 2 and 24, 3 and 16, 4 and 12, 6 and 8

2. a) Continue the pattern.

272, 264, 256, **248**, **240**, **232**, **224**

b) What is the rule for this pattern?

The rule is to subtract 8.

3. a) Estimate the difference of 1,254 – 382.

Possible answer:

900

b) Use the standard algorithm to find the difference of 1,254 – 382.

$$\begin{array}{r} {\scriptstyle 11\ \ 15} \\ 1,2\not{5}\not{4} \\ -\ \ 382 \\ \hline 872 \end{array}$$

4. Hannah's favorite baseball team scored 1,032 runs last season but only 789 runs this season. How many fewer runs did the team score this season than last? Show your thinking.

243 runs

Student work will vary.

Name: _____ Date: _____


Hannah

Reinforcing the Addition and Subtraction Standard Algorithms

1. Solve.

$42 \div 6 =$ **7** $\quad 40 \div 8 =$ **5** $\quad 24 \div 6 =$ **4**

2. A new football is $9. A new pair of cleats costs 5 times as much. How much does a new pair of cleats cost?

$45

3. a) Estimate the difference. $4{,}000 - 1{,}374 =$ **3,000**

Possible answer:

b) Use the standard algorithm to find the difference.

$4{,}000 - 1{,}374 =$ **2,626**

3 9 9 10
4,000
− 1,374
2,626

4. Hannah and her dad sold $3,000 of goods at the farmers market in September. They spent $1,856 on supplies to grow and take care of the goods they sold. What is the difference between the price they sold the goods for and the amount they spent to grow and care for them? Explain your thinking.

$1,144

Student explanations will vary.

Name: _____ Date: _____


Hannah

Solving Multistep Problems Involving Addition and Subtraction of Large Numbers

1. Create a shape that has an area of 24 square units.

Student answers will vary.

2. What is important to remember when multiplying a number by 1?

Possible answer:

When a number is multiplied by 1, the product is the same as that number.

3. Solve.

$12{,}065 + 8{,}953 =$ ***21,018***

$15{,}134 - 9{,}857 =$ ***5,277***

4. Hannah and her dad went to the county fair. This year's winning pumpkin weighed 2,471 pounds. The second-place pumpkin weighed 2,299 pounds. What was the total weight of the first-place and second-place pumpkins? Explain your thinking.

4,770 pounds

Student explanations will vary.

Topic 4

Extending Multiplication to Multidigit Whole Numbers

Recommended ST Math Objectives:

Multi-Digit Multiplication
Factors and Multiples
Generating Patterns

Name: _____ Date: _____

Using Place Value and Factors to Represent Large Numbers

1 How can base ten blocks show the relationship between 4, 40, and 400?

Possible answer:

4 hundreds flats is 10 times as much as 4 tens sticks, which is 10 times as much as 4 ones cubes.

2 What is the value of the underlined digit in 8̲4,345?

80,000

3 Fill in the blanks to complete the pattern.

A

50,000 = 50,000 ones

50,000 = ***5,000*** tens

50,000 = ***500*** hundreds

50,000 = 50 thousands

50,000 = ***5*** ten thousands

B

50,000 = ***50,000*** × 1

50,000 = ***5,000*** × 10

50,000 = 500 × 100

50,000 = ***50*** × 1,000

50,000 = ***5*** × 10,000

4 A baseball stadium has 20,000 seats. The seats are grouped into 100 sections that each have the same number of seats. How many seats are in each section? Show your thinking.

200

Possible explanation:

20,000 ÷ 100 = 200 or 200 × 100 = 20,000

Name: _____ Date: _____

Using Place Value Reasoning to Multiply 10, 100, and 1,000

1 Write 456,873 in expanded notation.

(4 × 100,000) + (5 × 10,000) + (6 × 1,000) + (8 × 100) + (7 × 10) + (3 × 1)

2 Complete each statement.

600 is 100 times as much as 6.

70 is *10* times as much as 7.

3 Use place value patterns to help you find each product.

3 × 70 = *210*

8 × 6 = *48*

3 × 700 = *2,100*

8 × 60 = *480*

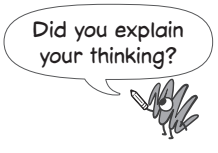
4 One way to find the product of 9 × 500 is to think of 9 × *5* × 100.

Another way to find the product of 9 × 500 is to think of 9 × 50 × *10*.

5 4 boxes of jalepeño peppers were sold at the farmers market. 40 jalepeño peppers were in each box. How many jalepeño peppers were sold at the farmers market? Explain your thinking.

160 jalepeño peppers

Possible explanation:
4 × 40 = 4 × 4 × 10
= 16 × 10
= 160



Name: _____ Date: _____


Logan

Using Place Value Reasoning to Multiply Multiples of 10

1 Which symbol makes the inequality true? Use $<$, $>$, or $=$.

65,839 **<** 65,938

2 Complete each statement.

5,759 rounded to the nearest 1,000 is **6,000**.

5,759 rounded to the nearest 100 is **5,800**.

3 What is the product of 80 × 70? Explain your thinking.

5,600

Possible explanation:
80 × 70 = 8 × 10 × 7 × 10
= 8 × 7 × 10 × 10
= 56 × 100
= 5,600

4 An author sold 40 books at a book fair yesterday. Today, the author sold 3 times as many books as yesterday. How many books did the author sell today? Show your thinking.

120 books

Possible explanation:
40 × 3 = 4 tens × 3
= 12 tens
= 120

5 Logan read 30 graphic novels in third grade. This year, she wants to read 3 times as many graphic novels. How many graphic novels does Logan want to read this year? Show your thinking.

90 graphic novels
30 × 3 = 90

Did you show your thinking?

Name: _____ Date: _____

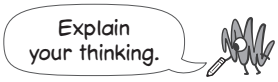
Exploring Strategies to Multiply Two-Digit Numbers

1 Solve.

$9{,}567 + 3{,}298 =$ ***12,865***

$2{,}289 + 6{,}372 =$ ***8,661***

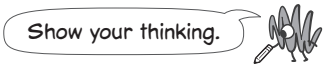
2 Circle the fraction that equals 4. $\frac{4}{4}$ $\frac{4}{1}$ $\frac{1}{4}$



Possible explanation:

The fraction $\frac{4}{1}$ means that each whole is divided into 1 part and there are 4 parts, so there are 4 wholes.

3 Multiply 17 × 3.

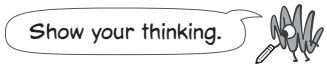


51

Possible explanation:

3 × 17 = (3 × 10) + (3 × 7)
= 30 + 21
= 51

4 Multiply 26 × 4.



104

Possible explanation:

25 × 4 = 100
1 × 4 = 4
100 + 4 = 104

5 The manager of a craft store ordered paintbrushes. The first box had 12 paintbrushes. The second box had 8 times as many paintbrushes as the first box. How many paintbrushes were in the second box? Show your thinking.

96 paintbrushes

Possible explanation:

12 × 2 = 24
12 × 4 = 48
12 × 8 = 96

Name: Date:

Multiplying Two-Digit Numbers with the Distributive Property

1 Solve.

$$\begin{array}{r} 229{,}406 \\ +\ 457{,}513 \\ \hline 686{,}919 \end{array}$$

2 How many pints are in 8 cups?

1 pint = 2 cups

4 pints

3 Use the horizontal partial products algorithm to find the value of the expression.

$6 \times 43 = 6 \times (40 + 3)$

$= (6 \times 40) + (6 \times 3)$

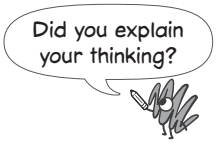
$= 240 + 18$

$= 258$

4 28 clowns perform at the circus. 8 clowns fit into 1 clown car. What is the fewest number of cars they need to have all of the clowns start the show in a car? Explain your thinking.

4 clown cars

28 ÷ 8 = 3 R4



Name: Date:

Multiplying Two-Digit Numbers with Multiple Strategies

1. 30,000 = **30** thousands

2. Solve.

$$\begin{array}{r} 6,132 \\ -\ 2,937 \\ \hline 3,195 \end{array}$$

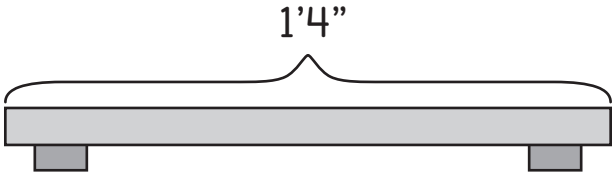
3. Solve using the standard algorithm and the area model.

$$\begin{array}{r} \overset{2}{} \\ 54 \\ \times\ \ 6 \\ \hline 324 \end{array}$$

6	50	4
	300	24

300 + 24 = 324

4. The art teacher bought a 3-pack of shelves. Each shelf is 1'4" long.
What is the total length of all 3 shelves in inches? Explain your thinking.



1 foot = 12 inches

48 inches

1 shelf:

12" + 4" = 16"

3 shelves:

s = 16" × 3

s = 48"

Possible explanation:

16"	16"	16"
s		

Name: Date:

Multiplying up to Four Digits with Multiple Strategies

1 Complete the table.

Position	Expression	Value
1	1 × 4	4
2	**2 × 4**	8
3	**3 × 4**	12
6	**6 × 4**	**24**

2 Solve using the standard algorithm.

$$\begin{array}{r} {\scriptstyle 6}\,17 \\ \times\quad 9 \\ \hline 153 \end{array}$$

3 Solve using vertical partial products.

$$\begin{array}{rrl} & 782 & \\ \times & 5 & \\ \hline & 10 & \leftarrow 5 \times 2 \\ & 400 & \leftarrow 5 \times 80 \\ + & 3{,}500 & \leftarrow 5 \times 700 \\ \hline & 3{,}910 & \end{array}$$

	700	80	2
5	5 × 700	5 ×80	5 × 2

4 Louis is making bread rolls for the shelter. 4 ounces of flour are needed to make each bread roll. How many ounces of flour are needed to make 255 bread rolls? Show your thinking.

1,020 ounces of flour

Student work will vary.

Name: Date:

Multiplying up to Four Digits with the Standard Algorithm

1. What will the product of 6 × 803 be?

even **odd**

Student explanations will vary.

2. Solve using the number line. 578 + 3,849 = ***4,427***

Student models will vary.

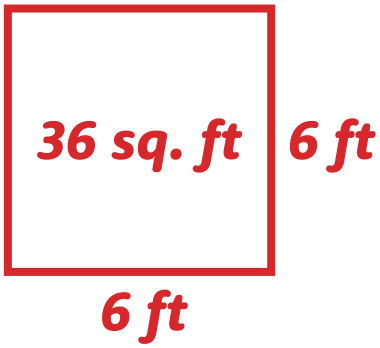
3. Use the standard algorithm to find each product.

$$\begin{array}{r} {\scriptstyle 3\ 2} \\ 186 \\ \times\quad 4 \\ \hline 744 \end{array}$$

$$\begin{array}{r} {\scriptstyle 7} \\ 809 \\ \times\quad 8 \\ \hline 6{,}472 \end{array}$$

4. A square rug has an area of 36 square feet. What are the side lengths of this rug?

6 ft

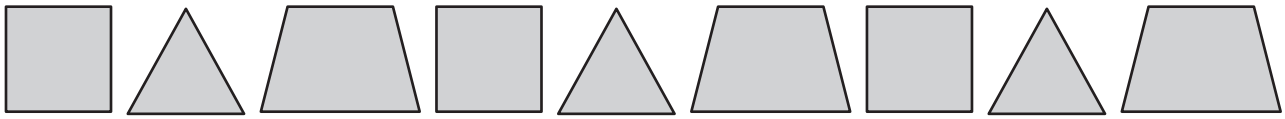


Name: Date:

Solving Multiplication Word Problems with the Standard Algorithm

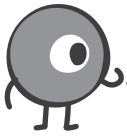
1. $90 \times 80 =$ **7,200**

2. What will be the 61st shape? How do you know?



Square

Student explanations will vary.

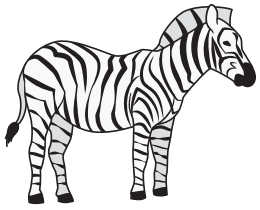
3. 

An adult hippo eats about 8,750 grams of grass per feeding.

How much grass does the hippo eat in 4 feedings?

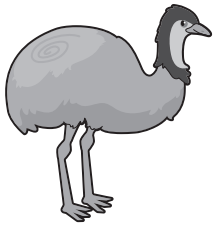
35,000 grams

4. Louis's class learned some cool facts at the zoo about how high certain animals can jump. Which of these animals can jump the highest?



A zebra can jump 2 yd.

A grasshopper can jump 30 in.



An emu can jump 7 ft.

1 yard (yd) = 3 feet (ft)
1 foot (ft) = 12 inches (in)

An emu can jump the highest.

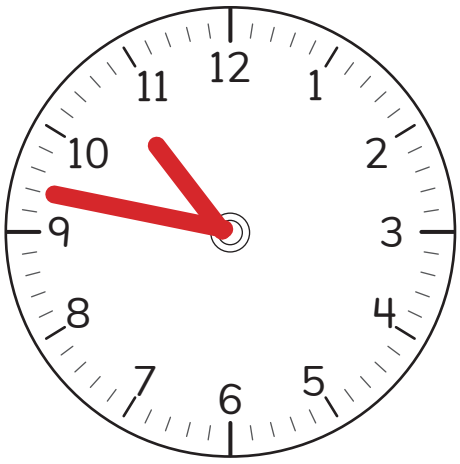
grasshopper: 30 in
zebra: 2 yd = 6 ft = 72 in
emu: 7 ft = 84 in

Name: _____ Date: _____


Mateo

Using Area Models to Multiply Two-Digit by Two-Digit Numbers

1 Draw arrows on the clock to show the time 10:47.



2 The rock concert was 3 hours and 15 minutes long. The concert ended at 9:45 p.m. At what time did the concert begin?

6:30 p.m.

3 Draw an open area model to find each product.

a) $4 \times 3{,}162$

12,648

Student models will vary.

b) 57×89

5,073

Student models will vary.

4 Mateo's abuela bought him packages of different-colored squares of paper to make another kind of mosaic. She bought Mateo 15 packages of squares. Each package has 48 squares inside. How many paper squares does Mateo have in all? Show your thinking.

720 paper squares

Student models will vary.

Name: _____ Date: _____


Louis

Writing Partial Products to Multiply Two-Digit by Two-Digit Numbers

1 a) Continue the pattern.

$7 + 8 =$ **15** $\quad 70 + 80 =$ **150** $\quad 700 + 800 =$ **1,500**

b) What do you notice about the sums?

Because each of the numbers being added is 10 times greater than in the previous problem, the sum is 10 times greater.

2 What problem does this model represent?

30 × 40	30 × 8
6 × 40	6 × 8

36

× **48**

		1		
	1	2	0	0
		2	4	0
		2	4	0
+			4	8
	1,	7	2	8

3 Fill in the missing blanks to complete the open area model.

	40	3
70	2,800	**210**
1	**40**	3

4 Louis and his stepdad are cooking spaghetti and meatballs for a large group of people tonight. They bought 35 bags of meatballs. If each bag contains 24 meatballs, how many total meatballs are there? Show your thinking.

840 meatballs

Student explanations will vary.

Name: _____ Date: _____

Multiplying Two 2-Digit Numbers with the Standard Algorithm

1. Find the missing multiples of 9. 9, 18, **27**, **36**, 45, 54, **63**

2. The area of a rectangle is 32 square feet. If the length of the rectangle is 4 feet, what is its width?

8 feet

3. $34 \times 26 =$ **884**

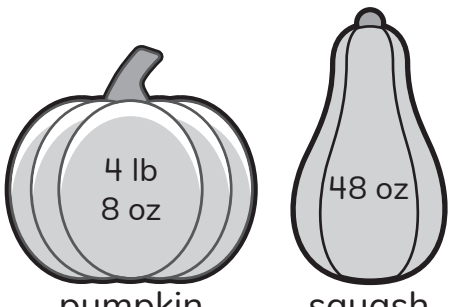
Solve using the area model. Then, solve using the standard algorithm.

	30	4	
6	180	24	= 204
20	600	80	= 680
			884

$$\begin{array}{r} {\scriptstyle 2} \\ 34 \\ \times\ 26 \\ \hline 204 \\ +\ 680 \\ \hline 884 \end{array}$$

4. Which weighs more: a pumpkin weighing 4 pounds 8 ounces or a squash weighing 48 ounces? How much more?

1 pound (lb)	=	16 ounces (oz)



The pumpkin weighs more because 72 oz > 48 oz.

The pumpkin weighs 24 oz more because 72 oz − 48 oz = 24 oz.

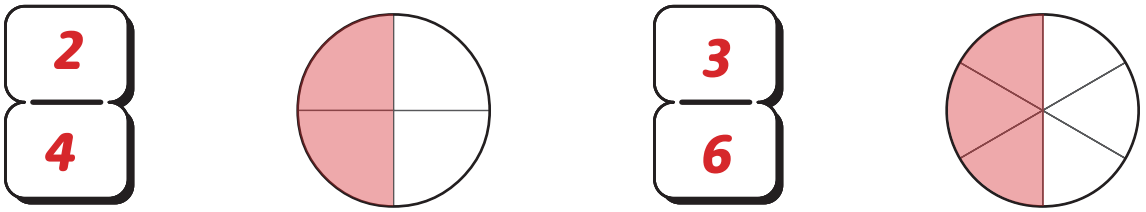
Name: _____ Date: _____


Mateo

Choosing Strategies to Multiply Two-Digit by Two-Digit Numbers

1. Solve. $798 + 989 =$ **1,787**

2. Use the models to show four fractions that are equivalent to $\frac{1}{2}$.



3. Circle the expressions that could be used to find the product of 24 × 73.

(20 × 73) + (4 × 73)

(2 × 7) + (2 × 3) + (4 × 7) + (4 × 3)

(25 × 73) – (1 × 73)

(20 × 70) + (20 × 3) + (4 × 70) + (4 × 3)

(20 × 70) + (4 × 3)

4. Mateo helped his abuela make a hammock that was 84 inches long and 48 inches wide. What is the area of the hammock?

4,032 square inches

5. Mateo's *abuela* surprised him with a tiny hammock that is just right for his dog, Arturito! She bought Mateo 16 bags of beads for the ends of the hammock. If each bag has 36 beads, how many total beads does Mateo have? Show your thinking.

576 beads

Student explanations will vary.

Name: Date:

Choosing Strategies for Multiplication

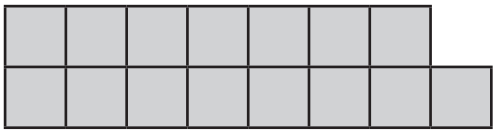
1 Write an expression that represents the model.

Possible answers:

(30 + 8) × (10 + 9)

38 × 19

2



Which equations represent the model? How do you know?

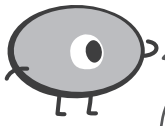
15 ÷ 2 = 7 R1

15 = (2 × 7) + 1

15 = 5 + 5 + 5

Student explanations will vary.

3



1 year = 12 months = 52 weeks = 365 days

I want to be in the critter relay race next year! I will train for 2 hours every day for 1 year. How many total hours will that be?

730 hours

4 A school set an ST Math goal of completing 1,000,000 puzzles this year. The table below lists the number of puzzles students have completed in different grades.

How many more puzzles do the students in the school still need to complete for us to reach their goal?

Grades	Puzzles
K, 1, 2	436,545
3, 4, 5	298,017

265,438 puzzles

```
  436,545
+ 298,017
  734,562
```

734,562 + p = 1,000,000

p = 265,438

Name: _____ Date: _____

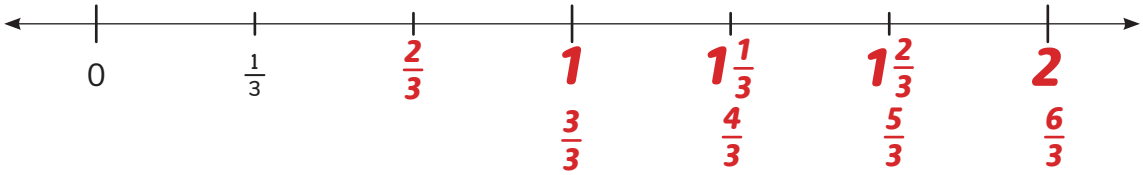

Louis

Deriving Formulas for the Perimeter of Rectangles

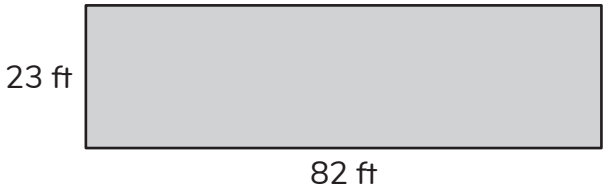
1 There are 1,000 milliliters in a liter. Complete the measurement conversion.

45 liters = **45,000** milliliters

2 Label the tick marks to complete the number line.



3 Complete the formula to find the perimeter of the rectangle.



(2 × **23**) + (2 × **82**) = **210** ft

Students may also write (2 × 82) + (2 × 23) = 210 ft.

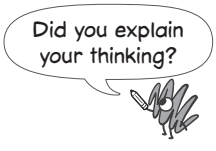
4 Solve. 3 × 1,804 = **5,412**

5 Louis painted lines for a small basketball court in front of his basketball hoop. If the court is a 15 feet by 11 feet rectangle, what is the perimeter of the court? Explain your thinking.

52 feet

Possible explanation:

15 + 15 + 11 + 11 = 52



Name: Date:

Finding the Perimeter and Area of Squares

1 Solve.

$$\begin{array}{r} 2{,}304 \\ \times \quad 7 \\ \hline \end{array}$$

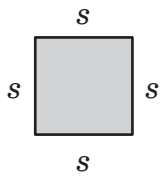
16,128

2 Complete the equations.

$23{,}000 \div$ **1** $= 23{,}000$

$23{,}000 \div 1{,}000 =$ **23**

3 a) Use the formula to find the perimeter of the square. For this square, $s = 6$ units.

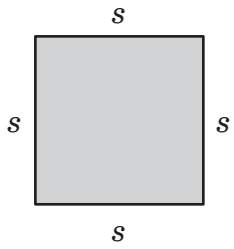


$P = 4 \times s$

$P = 4 \times$ **6**

$P =$ **24** units

b) Use the formula to find the area of the square. For this square, $s = 15$ units.



$A = s \times s$

$A =$ **15** $\times$ **15**

$A =$ **225** square units

4 A *pho* recipe calls for 6 cups of broth. There is a 32 fl oz box of broth in the kitchen. Is there enough broth in the kitchen to make the pho recipe? Explain your thinking.

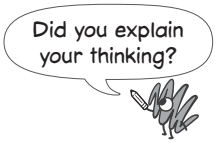
1 cup = 8 fluid ounces

No, there is not enough broth in the kitchen.

Possible explanation:

Recipe: 6 × 8 = 48 fl oz

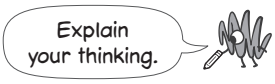
32 fl oz < 48 fl oz



Name: _____ Date: _____

Modeling and Solving Multistep Word Problems Involving Multiplication

1. Is 13 grams or 13 kilograms a better estimate for the mass of a desk?

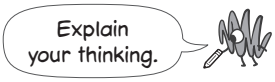


13 kg

Possible explanation:

13 g would be much lighter than the mass of a desk.

2. Is 70 grams or 70 kilograms a better estimate for the mass of an apple?



70 g

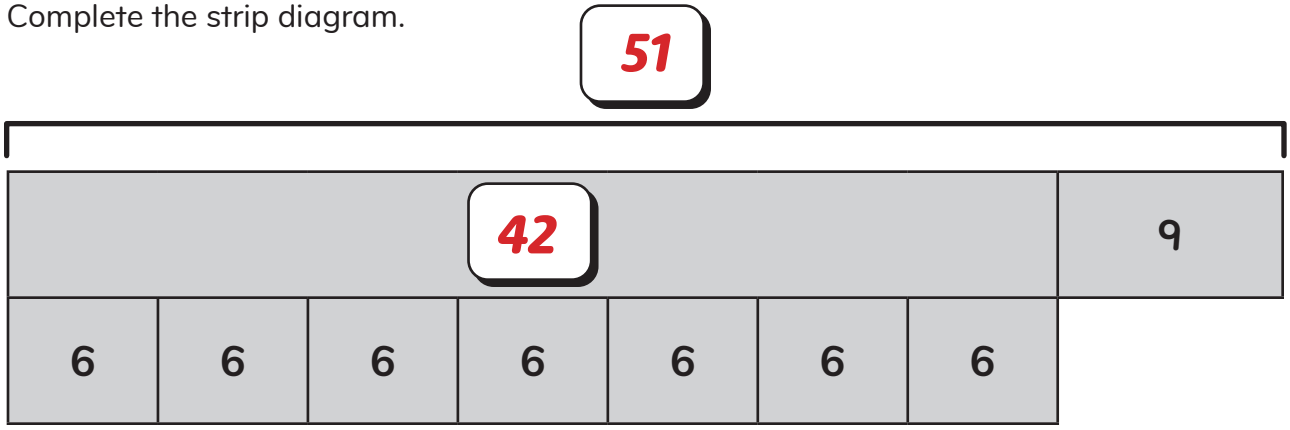
Possible explanation:

70 kg would be much heavier than the mass of an apple.

3. Draw a strip diagram to represent (1,367 × 4) – 859.

Student models will vary.

4. Complete the strip diagram.



5. The manager of the duck pond at the carnival collected 2,488 tickets. The manager of the bean bag toss collected 3 times as many tickets as the manager of the duck pond. The manager of the balloon pop collected 1,987 fewer tickets than the manager of the bean bag toss. How many tickets were collected altogether? Show your thinking.

15,429 tickets

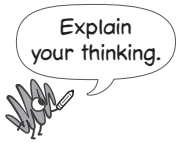
Student work will vary.

Name: _____ Date: _____


Mateo

Choosing Strategies to Solve Multistep Word Problems Involving Multiplication

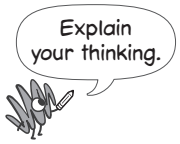
1. Is 9 square inches or 9 square feet a better estimate for the area of a sticky note?



9 square inches

Possible explanation:
A sticky note with an area of 9 square inches could be a square with side lengths of 3 inches, which is about the size of a sticky note.

2. Is 84 square meters or 84 square miles a better estimate for the area of a classroom?



84 square meters

Possible explanation:
A classroom would be measured in meters rather than miles because a classroom does not have side lengths that are miles long.

3. Mateo's family goes to a food truck on Saturday. They order 6 baskets of fried yuca that each cost $5, and 3 bottles of water that each cost $1. Mateo pays for the meal with a $100 bill.

   a) How much change will he receive?

   $67

   b) Draw a strip diagram to represent the problem.

$100									
$5	***$5***	***$5***	***$5***	***$5***	***$5***	***$1***	***$1***	***$1***	***$□***

4. The owner of a food truck sold 312 orders of fried plantains for $4 each and 221 orders of pupusas for $9 each. What was the total sale price of these items in all? Show your thinking.

   $3,237

   Student models will vary.

Topic 5

Building Division Strategies

Recommended ST Math Objectives:

Multi-Digit Division
Factors and Multiples
Multi-Step Problems Using 4 Operations

Name: _____ Date: _____


Mateo

Interpreting Division as Partitive or Quotitive

1. What is the perimeter of the rectangle?

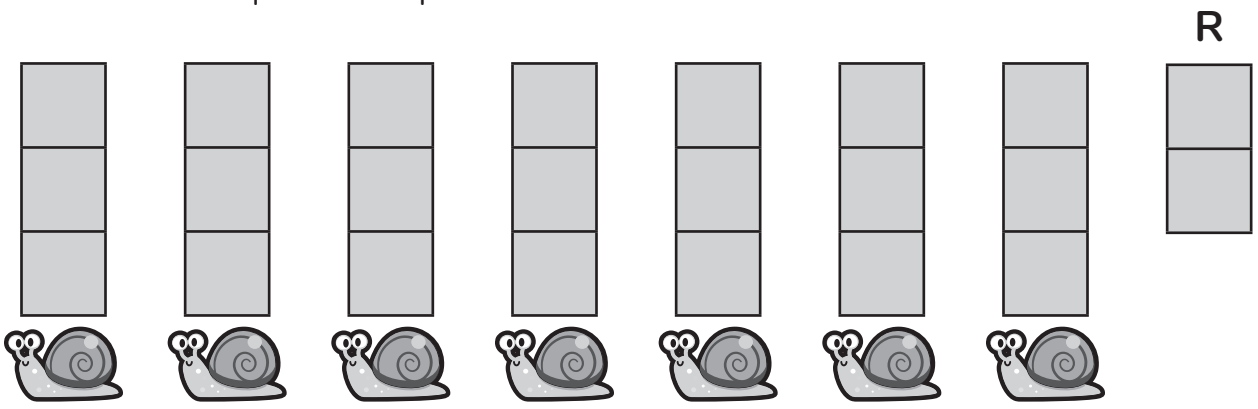
96 feet

2. Solve. $900 - 647 =$ ***253*** $500 - 332 =$ ***168***

3. There are 65 blocks. Each turtle gets 9 blocks and there are 2 blocks left over. How many turtles are there?

7 turtles

4. Write a division equation to represent the model.



23 ÷ 7 = 3 R2

5. Mateo is cleaning up his crayons by putting them into bags. He has 51 crayons, and 8 crayons will fit in each bag. How many full bags of crayons will Mateo have? How many crayons will be left over? Explain your thinking.

6 full bags with 3 crayons left over

Possible explanation:

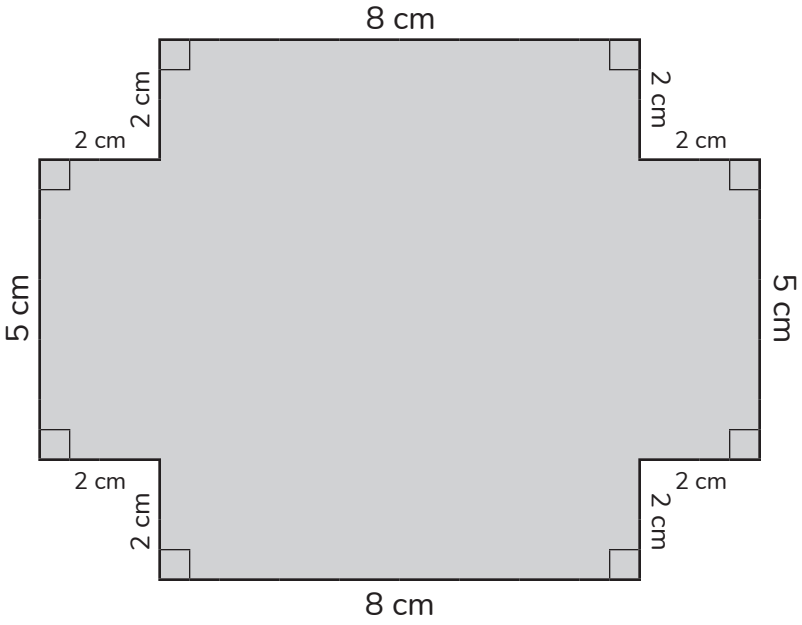
51 ÷ 8 = 6 R3

Name: _____ Date: _____

Representing Division with Strip Diagrams

1 a) Find the area of the figure.

92 square cm



b) How does decomposing the figure into smaller parts help when solving for area?

Student explanations will vary.

2 Aleki spent a total of 63 minutes practicing the song that he will play at a concert. If he played the song 9 times, how long is the song?

Write a division equation and draw a model to show your thinking.

7 minutes

Possible equation:

63 ÷ 9 = 7

Student models will vary.

3 For the party after his concert, Aleki made 27 bowls of snacks. If there are 4 tables, what is the greatest number of bowls Aleki can put on each table if he wants each table to have the same number of bowls?

Write a division equation and draw a model to show your thinking.

6 bowls

Possible equation:

27 ÷ 4 = 6 R3

Student models will vary.

4 Naomi is organizing her favorite shells into new display cases. Naomi has 49 shells to display. If each display case holds 6 shells, how many display cases can Naomi fill? Explain your thinking.

8 display cases

Possible explanation:

49 ÷ 6 = 8 R1

She can fill 8 display cases and have 1 shell left over.

Did you explain your thinking?

Name: _____ Date: _____

Modeling and Solving Division Problems on an Open Number Line

1. Solve. $45 \times 6 = \boxed{270}$ $52 \times 8 = \boxed{416}$

2. Circle the numbers that are multiples of 6. **12** 26 **36** 40

3. Use the number line to find the value of 38 – 9 – 9 – 9 – 1.

10 ***Student models will vary.***

4. Draw a strip diagram to find the quotient of 56 ÷ 8.

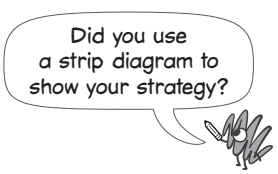
7 ***Student models will vary.***

5. The P.E. teacher is organizing 44 jump ropes into boxes. Each box holds 7 jump ropes. How many jump ropes will not be in a box? Use a strip diagram to show your strategy.

2 jump ropes

Possible explanation:
The teacher will use 6 boxes, with 2 ropes left over because 44 ÷ 7 = 6 R2.

Student models will vary.



Name: Date:

Exploring Strategies to Solve Division Problems

1. Complete each statement.

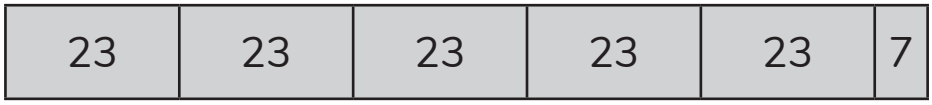
35 is **7** times as much as 5.

72 is **12** times as much as 6.

2. Solve.

$7 \times 8 =$ **56** $70 \times 8 =$ **560** $700 \times 8 =$ **5,600**

3. Write an expression to represent this model.



Possible answer:

(5 × 23) + 7

4. Use the number line to find the quotient of 122 ÷ 5.

24 R2 ***Student models will vary.***

5. The critters are organizing blocks into boxes. Each box is the same size, and they have 124 blocks. If the critters put 20 blocks into each box, how many boxes will they fill? Will any blocks be left over? Explain your thinking.

6 boxes with 4 blocks left over

Possible explanation:

124 ÷ 20 = 6 R4

Name: Date:

Modeling and Solving Division Problems with Equal Groups

1. Solve for t. $t \times 9 = 81$

9

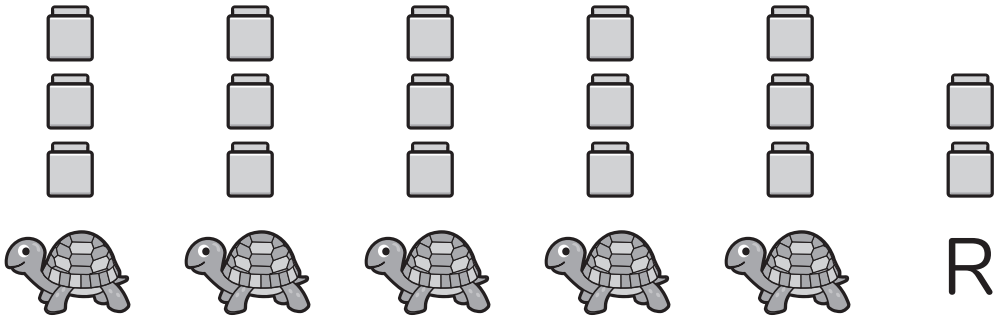
2. Write 3 numbers that round to 6,700 when rounded to the nearest hundred.

Possible answers:

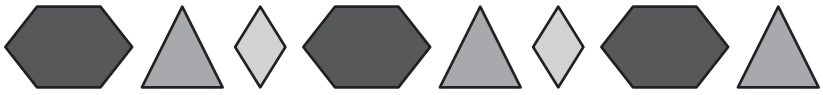
6,701; 6,710; 6,699

3. Write an equation to represent this model. **17** ÷ **5** = **3** R **2**

Students may also write: 17 ÷ 3 = 5 R 2.



4. What will the 45th shape be?



The pattern has 3 shapes, so all of the multiples of 3 are rhombuses. 45 is a multiple of 3, so the 45th shape will be a rhombus.

5. There are 75 basketball players. They need to be put on 8 equal-sized teams. How many players will be on each team? How many players will left over? Show your thinking.

9 players with 3 left over

Student explanations will vary.

Name: _____ Date: _____


Logan

Modeling and Solving Division Problems with Arrays

1 Solve.

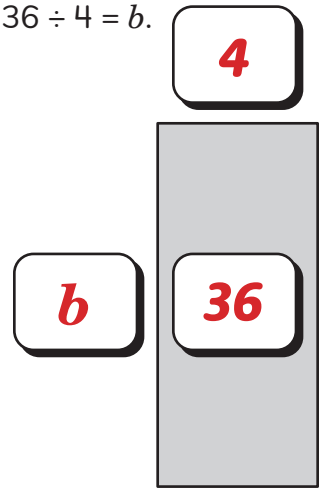
23,485 + 98,578 = **122,063**

50,723 – 38,688 = **12,035**

2 a) Label the model to show how we can use it to represent 36 ÷ 4 = b.

b) Use the model to find the value of b.

$b = 9$



3 Logan wants to read the 84 pages of her new graphic novel in 6 days. How many pages does she need to read each day to meet her goal? Show your thinking.

14 pages

Student explanations will vary.

Name: Date:

Using Multiples and Place Value to Solve Division Problems

1. A rectangle has a length of 12 inches and a width of 9 inches. What is the perimeter of the rectangle?

42 inches

2. What is the value of the underlined digit in $\underline{7}89,123$?

700,000

3. Complete each statement to make it true.

Possible answers:

36 is a multiple of 6.

2 is a factor of 6.

4. Solve. **8** $= 24 \div 3$

80 $= 240 \div 3$

5. A teacher writes 56,000 ÷ 7 on the board. The teacher said knowing the factors of 56 can help the students find the quotient. Find the quotient and explain why you agree or disagree with the teacher.

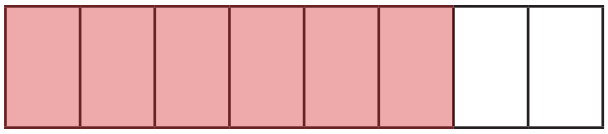
8,000

I know that 56 = 7 × 8, so I know that 56,000 = 7 × 8,000. Knowing that 7 and 8 are factors of 56 helped me find the quotient.

Name: _____ Date: _____

Exploring Strategies to Solve Division Word Problems

1. a) Shade in 6 parts of the rectangle. What fraction of the rectangle did you shade?



$\frac{6}{8}$ or $\frac{3}{4}$

b) Circle the fraction that is equivalent to the shaded part of the rectangle.

$\frac{1}{2}$ $\frac{2}{4}$ $\frac{2}{3}$ $\frac{3}{4}$

2. Draw a strip diagram to represent 2,800 ÷ 4, and then find the quotient.

700

Student models will vary.

3. Complete each statement.

If I know 56 ÷ 7 = 8, then I also know 5,600 ÷ 7 = **800**.

If I know 56 ÷ 7 = 8, then I also know 56,000 ÷ 7 = **8,000**.

4. Last week, 2,800 fish were caught at the outrigger competition. An equal number of the fish were stored in each of 7 barrels. How many fish were in each barrel? Show your thinking.

400 fish

Student models will vary.

Name: _____ Date: _____


Aleki

Making Equal Groups to Divide Multidigit Numbers

1 A pickle company packages 23 pickles in a jar. The company is able to fill 78 jars a day.

a) Estimate how many pickles will be needed to fill all of the jars in one day.

Possible estimate:

1,600 pickles

b) How many pickles will the company actually need to fill the jars?

1,794 pickles

c) How close was your estimate to the actual answer?

Student answers will vary.

2 Solve. $432 \div 4 =$ ***108*** $2{,}418 \div 6 =$ ***403***

3 Aleki has 1,536 feet of fishing line. If he uses the same amount of fishing line for each of 3 canoes, how much fishing line will each canoe get? Show your thinking.

512 feet

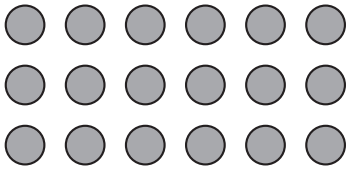
Student explanations will vary.

Name: _____ Date: _____


Aleki

Using an Area Model to Divide Multidigit Numbers

1 Write 2 different equations for the total number of objects in the array.



Possible answers:

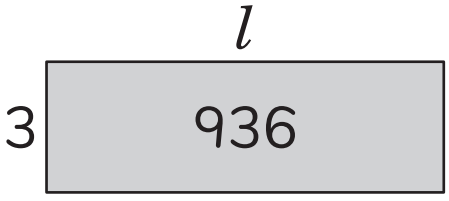
3 × 6 = 18 ***18 ÷ 6 = 3***

6 × 3 = 18 ***18 ÷ 3 = 6***

2 Aleki practiced the drums for 15 minutes on Friday. He practiced 3 times as long on Saturday as he did on Friday. How long did Aleki practice the drums on Saturday?

45 minutes

3 Use partial quotients to solve for the missing side length. 936 ÷ 3 = ***312***



Possible answer:
900 ÷ 3 = 300
30 ÷ 3 = 10
6 ÷ 3 = 2
936 ÷ 3 = 312

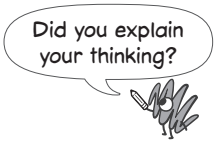
4 Use partial quotients to solve. 287 ÷ 7 = ***41***

Possible answer:
280 ÷ 7 = 40
7 ÷ 7 = 1
287 ÷ 7 = 41

5 A rectangle has an area of 6,448 square feet. If the width of the rectangle is 8 feet, what is the length? Show your thinking.

806 feet

Possible explanation:
6,400 ÷ 8 = 800
48 ÷ 8 = 6
6,448 ÷ 8 = 806



Name: _____ Date: _____

Partitioning Area Models in Different Ways to Divide Multidigit Numbers

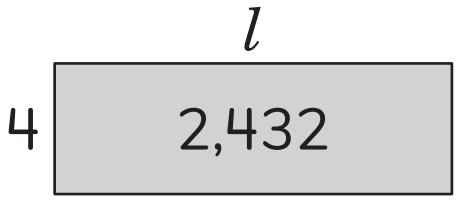
1. What is 500,000 + 80,000 + 3,000 + 200 + 5 in standard form?

583,205

2. Use the correct symbol to make this statement true. Use $<$, $>$, or $=$.

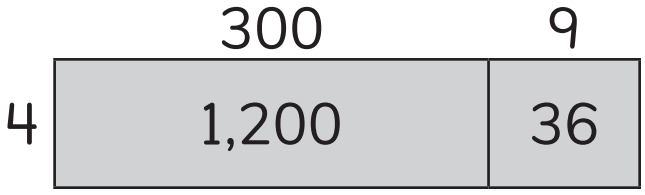
34,398 (<) 34,893

3. Write a division equation to match the model and find the value of l.



2,432 ÷ 4 = l
l = 608

4. Write a division equation to match the model.



Possible answer:
1,236 ÷ 4 = 309

5. The park will have a new dog run that will be 6 yards wide and in the shape of a rectangle. The perimeter of the dog run will be made of sections of fence that are 1 yard long. If there are 164 sections of fence, how long can the dog run be in yards? Explain your thinking.

76 yards

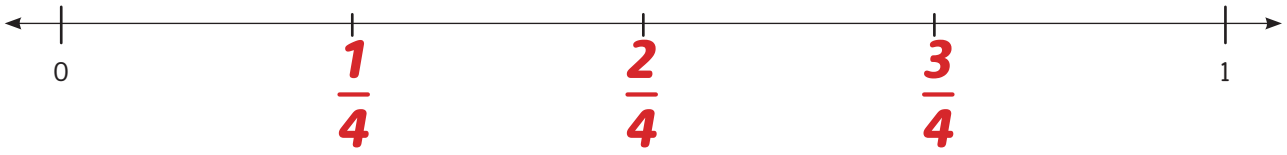
Possible explanation:

There are 164 sections of fence and each section is 1 yard long, which means the perimeter can be 164 yards. The width is 6 yards, so 2 sides each have a length of 6 yards. 164 – 12 = 152 yards, so 152 yards are remaining for both sides of the length. So the length of the run = 152 ÷ 2 = 76 yards.

Name: Date:

Regrouping by Place Value to Divide Multidigit Numbers

1. Label each tick mark on the number line.



2. A movie begins at 1:20 p.m. The movie is 120 minutes long. At what time will the movie end?

3:20 p.m.

3. Draw a model with tens and ones to solve the equation $137 \div 4 = q$.

q = 34 R1

Student models will vary.

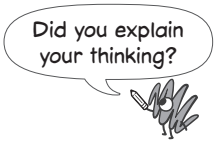
4. Draw a model with tens and ones to solve the equation $256 \div 7 = q$.

q = 36 R4

Student models will vary.

5. A theater with 244 seats is giving away tickets to a play. If the theater wants to give an equal number of tickets to 8 different classes, how many tickets will each class get? How many tickets will be left over? Explain your thinking.

244 ÷ 8 = 30 R4, so each class will get 30 tickets and there will be 4 tickets left over.



Name: _____ Date: _____

Building Area Models to Divide Multidigit Numbers

1 Complete each statement.

264,894 rounded to the nearest 10,000 is **260,000**.

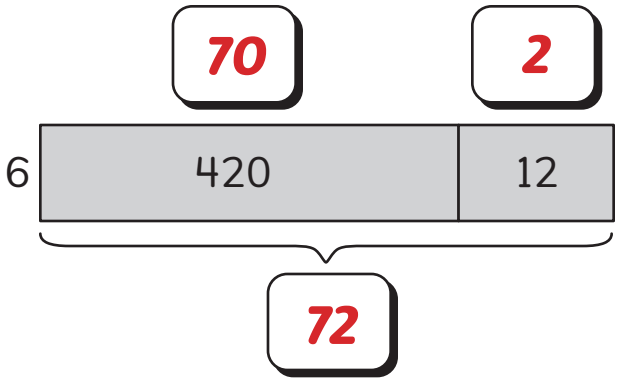
264,894 rounded to the nearest 100,000 is **300,000**.

2 Solve.

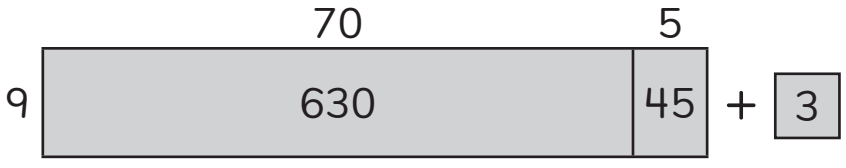
8,762 + 746 = **9,508**

3 Complete the model to find the quotient of 432 ÷ 6.

72



4 What division equation does this model represent?



678 ÷ 9 = 75 R3

5 Aleki bought a storage box for some of his old-fashioned records that he uses to listen to music. The rectangular bottom of the storage box has an area of 126 square inches. If the width of the storage box is 9 inches, what is the length? Show your thinking.

14 inches

Possible explanation:
126 ÷ 9 = (90 ÷ 9) + (36 ÷ 9)
= 10 + 4
= 14

Name: Date:

Exploring Written Methods to Divide Multidigit Numbers

1. Solve. $93{,}045 - 4{,}983 =$ **88,062**

2. There are 6 boxes. Each box has 9 paper clips in it. How many paper clips are there in all?

54 paper clips

3. Use vertical partial quotients to find the value of 428 ÷ 3.

142 R **2**

3 ⟌ 428		
−300	3 ×	100
128		
−120	3 ×	40
8		
− 6	3 ×	2
2		

4. What is the quotient of 5,224 ÷ 8?

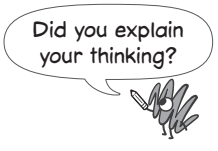
653

5. The park manager had 216 workers volunteer to clean up the park. The workers were divided into 5 equal teams to handle different tasks. How many workers were on each team? Were all workers on a team? Explain your thinking.

43 workers on a team with 1 left over and not on a team

Possible explanation:

216 ÷ 5 = 43 R1



Name: _____ Date: _____

Comparing Written Methods to Divide Multidigit Numbers

1 The rule for this pattern is add 4.

a) Write the next 3 numbers. 3, 7, 11, **15**, **19**, **23**

b) A student said that every number will be a prime number. Is the student correct? Explain your answer.

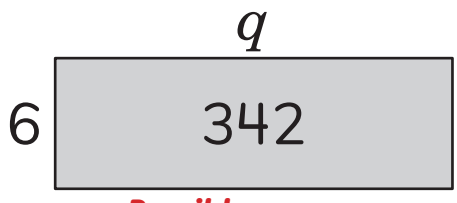
Possible answer:

The student is not correct because 15 has factors of 3 and 5, so it is not prime.

2 a) Create a pattern. ☐, ☐, ☐, ☐

b) The rule is ***Student answers will vary.***.

3 Complete the equation to represent this model.



Possible answers:

342 ÷ **6** = **q**

or 342 ÷ q = 6

4 Solve.

472 ÷ 5 = **94 R2**

5 The park manager asked 528 volunteers to help with the annual songbird count. The volunteers were divided up into 7 equal teams to count birds in the park. How many volunteers were on each team? Were all volunteers on a team? Show your thinking.

75 volunteers were on each team, with 3 volunteers left over who were not on a team.

Student explanations will vary.

Did you explain your thinking?

Topic 6

Extending Division Strategies

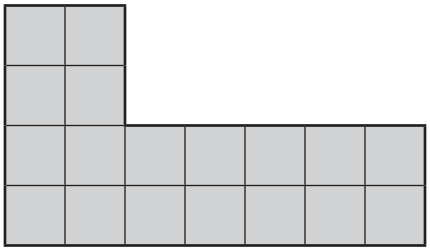
Recommended ST Math Objectives:

Multi-Digit Division
Multi-Step Problems Using 4 Operations
Factors and Multiples

Name: Date:

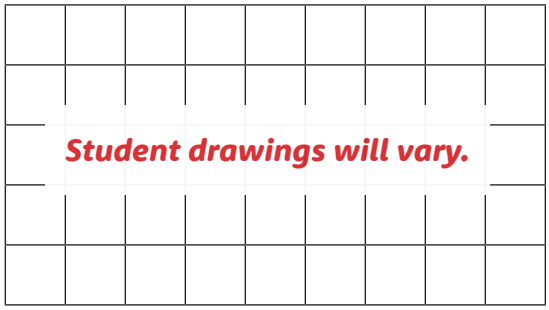
Identifying Common Multiples and Factors

1. What is the area of the figure?



18 square units

2. Draw a rectangle.



3. List the first 5 multiples of each number: 6 and 12.

6: 6, 12, 18, 24, 30
12: 12, 24, 36, 48, 60

4. Use the T-chart to organize the factor pairs of 48.

48	
1	48
2	24
3	16
4	12
6	8

5. A chef is baking a chocolate cake. The chef has 24 raspberries to place in an array on top of the cake. What are all of the arrays that could be used to arrange the raspberries?

1 row of 24
2 rows of 12
3 rows of 8
4 rows of 6
6 rows of 4
8 rows of 3
12 rows of 2
24 rows of 1

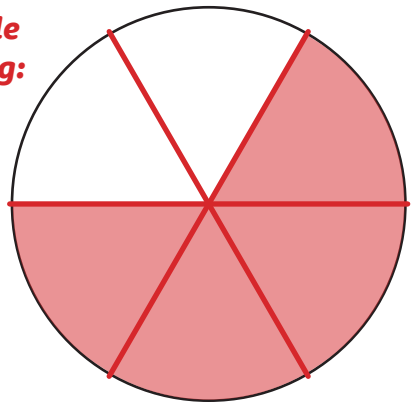
Name: _____ Date: _____


Aleki

Doubling and Halving to Find Factor Pairs

1. Partition the circle into sixths. Shade in $\frac{4}{6}$.

Possible drawing:



2. What fraction is equivalent to $\frac{4}{6}$?

Possible answer:

$$\frac{2}{3}$$

3. Use the doubling and halving strategy to find the product of 16 × 8.

$$16 \times 8 = 32 \times 4$$
$$= 64 \times 2$$
$$= 128$$

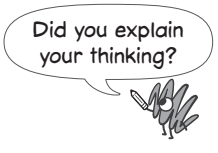
4. List all the factor pairs for 54.

1 and 54, 2 and 27, 3 and 18, 6 and 9

5. Aleki is setting up for the school band performance. What are all of the different ways he could arrange 112 chairs in a rectangular array? Which way do you think is best? Explain your thinking.

1 row of 112 chairs, 112 rows with 1 chair each, 2 rows of 56 chairs, 56 rows of 2 chairs, 4 rows of 28 chairs, 28 rows of 4 chairs, 7 rows of 16 chairs, 16 rows of 7 chairs, 8 rows of 14 chairs, 14 rows of 8 chairs

Student explanations will vary.



Name: _____ Date: _____


Aleki

Exploring Factors and Multiples

1 Complete each statement.

900 is 10 times as much as 90.

9,000 is 100 times as much as 90.

2 What is 200,000 + 30,000 + 500 + 60 in standard form?

230,560

3 All factors of even numbers are even.

a) Do you think this is true or false?

Possible explanation: False. Even numbers must have at least one even factor in a factor pair, but the other factor can be odd or even.

b) Give 3 examples to support your thinking.

Possible answers:
2 × 3 = 6; 3 × 4 =12; 4 × 5 = 20

4 What are 2 common multiples of 4 and 6?

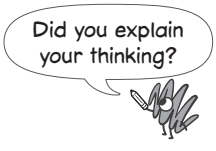
Possible answers:
24 and 48

5 Aleki's uncle is hosting a cookout for 60 people. Hot dogs come in packages of 8. Hot dog buns come in packages of 12. Aleki's uncle needs at least 1 hot dog and 1 bun per person. He wants to have the same number of hot dogs and hot dog buns. How many packages of hot dogs and how many packages of hot dog buns should Alekiis uncle buy? Explain your thinking.

9 packages of hot dogs and 6 packages of hot dog buns

Possible explanation:
Possible numbers of hot dogs: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80
Possible numbers of hot dog buns: 12, 36, 48, 60, 72

72 is a factor of both numbers, so he could buy 9 packages of hot dogs and 6 packages of hot dog buns to have 72 of each.



Name: _____ Date: _____


Hannah

Using Length Models to Find Factors and Multiples

1. Estimate the sum of 65,873 + 23,782 by rounding the addends to the nearest 1,000.

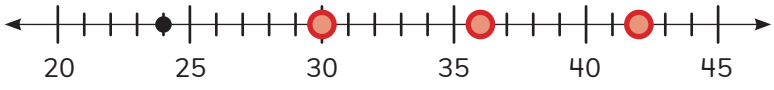
90,000

2. Find the sum. 65,873 + 23,782 = **89,655**

3. Complete the strip diagram to show division into equal parts.

192							
96				**96**			
48		**48**		**48**		**48**	
24	**24**	**24**	**24**	**24**	**24**	**24**	**24**

4. 42 is a multiple of this machine. Show what the pattern could be and complete the equation.



Possible answer:

7 × **6** = 42

5. Hannah's dad wants to plant 60 pumpkin seeds. The seeds come in packs of 4, 5, or 9. Which size pack should Hannah's dad buy to have exactly 60 seeds? How many of that pack? Explain your thinking.

He could buy 15 packs of 4 seeds or 12 packs of 5 seeds.

Name: _____ Date: _____


Candace

Representing the Standard Division Algorithm with Base Ten Models

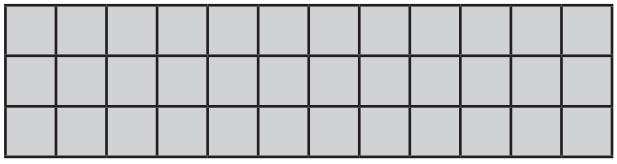
1 Draw an area model, and then solve.

$27 \times 34 =$ **918**

Possible model:

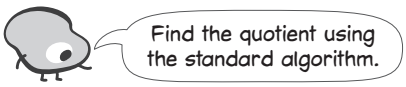
	30	4
20	600	80
7	210	28

2 Write a factor pair that represents the dimensions of the rectangle.



Possible answer: **3** × **12**

3



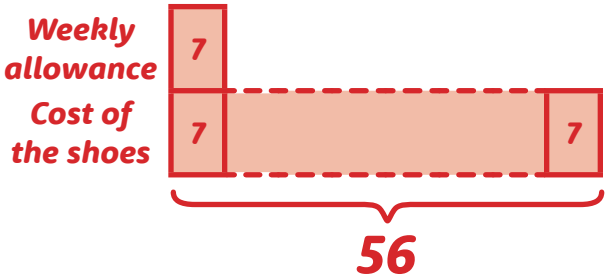
		1	**2**	**1** **R2**
5)	6	0	7	
−	**5**	**0**	**0**	**5 × 100**
	1	**0**	**7**	
−	**1**	**0**	**0**	**5 × 20**
			7	
−			**5**	**5 × 1**
			2	

4 Candace wants a new pair of soccer cleats that cost $56. She earns $7 every week for helping with chores and yard work. How long will it take Candace to save enough money to buy the new soccer cleats?

8 weeks

Possible model:

$7 \times w = 56$



Name: Date:

Representing the Standard Division Algorithm with Area Models

1 Use horizontal partial products to solve.

$9 \times 37 = 9 \times (30 + 7)$

$= (9 \times 30) + (9 \times 7)$

$= 270 + 63$

$= 333$

2

Divide using an area model and the standard algorithm.

4 Thousands + 1 Hundreds + 7 Tens + 5 Ones

2	8,000	200	140	10

$$
\begin{array}{r|l}
 & 4,175 \\
\hline
2 & 8,350 \\
- & 8,000 \\
\hline
 & 350 \\
- & 200 \\
\hline
 & 150 \\
- & 140 \\
\hline
 & 10 \\
- & 10 \\
\hline
 & 0
\end{array}
$$

3 The seat of the chair measures 1' 2" off the ground. The desk is twice as tall as the height of the chair seat. How tall is the desk, in inches?

1 foot = 12 inches

28"

1'2" = 12 inches + 2 inches = 14 inches

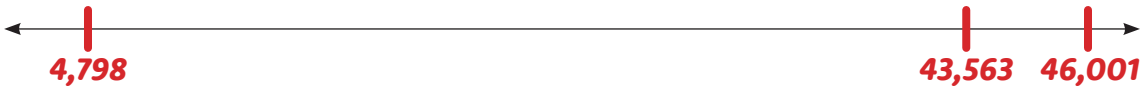
14 × 2 = 28 inches

Name: _____ Date: _____

Dividing with the Standard Algorithm

1 Place the numbers on the number line in order from least to greatest.

46,001 4,798 43,563



2 a) Use the data to complete the frequency table.

28, 30, 47, 44, 51, 15, 32, 30, 36, 49, 24, 55, 37

Number of Minutes Students Read Yesterday

Time Spent Reading (minutes)	Number of Students
10–19	I
20–29	II
30–39	IIII
40–49	III
50–59	II

b) What is the most common amount of time spent reading?

30–39 minutes

3 Find each quotient using the standard algorithm for division.

a) $7 \overline{)3{,}268}$

493 R5

- 2,800
656
- 630
26
- 21
5

b) $4 \overline{)4{,}080}$

1,020

- 4,000
80
- 80
0

5 If a squirrel collects about 25 acorns in 1 hour, about how many acorns does the squirrel collect in 12 hours? Show how you know.

About 300 acorns

$25 \times 12 = a$

Possible explanation:

Use doubling and halving.

$50 \times 6 = a$

$300 = a$

Name: _____ Date: _____


Aleki

Solving Problems with Multiplication and Division

1 Solve using the standard algorithm.

$$\begin{array}{r} {\scriptstyle 1\ 1\ 1\ \ } \\ 7{,}392 \\ +\ \ 608 \\ \hline 8{,}000 \end{array}$$

2 Find the quotient using the standard algorithm.

$$\begin{array}{r} 74 \\ 4\overline{)296} \\ -\ 280 \\ \hline 16 \\ -\ 16 \\ \hline 0 \end{array}$$

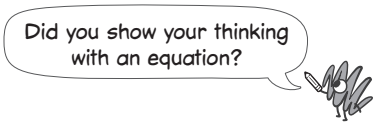
3 Wayfinders completed a journey of 1,323 nautical miles in 9 days and sailed the same distance each day. How many nautical miles did the wayfinders sail each day?

1,323 ÷ 9 = 147 nautical miles each day

4 Aleki and his uncle went on a 4 mile hike while they were in Samoa. How far did they hike in yards? Show your thinking with an equation.

1 mile = 1,760 yards

4 × 1,760 = 7,040 yards



Name: _____ Date: _____

Modeling and Solving Multistep Word Problems Involving Division

1. Estimate the difference of 45,808 – 14,345 to the nearest 1,000.

   32,000

2. Find the difference. 45,808 – 14,345 = ***31,463***

3. List all of the factor pairs for 64.

   1 and 64, 2 and 32, 4 and 16, 8 and 8

4. Solve.

   1,608 ÷ 6 = ***268*** 1,308 ÷ 4 = ***327***

5. There are a total of 4,088 beads in a shipment. The beads are packaged into 8 equal bags. How many beads are in each bag? Show your thinking.

   511 beads

   Student explanations will vary.

Topic 7

Extending Addition and Subtraction to Fractions

Recommended ST Math Objectives:

Adding and Subtracting Fractions

Mixed Numbers

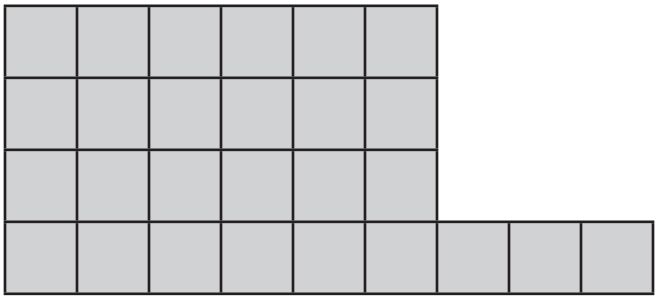
Fractions - Equivalence and Ordering

Name: _____ Date: _____


Dani

Introducing Fractions Greater Than 1 as a Sum of Unit Fractions

1 Circle all the equations that can be used to represent the model.



$27 \div 4 = 6$ R3

$24 \div 4 = 6$

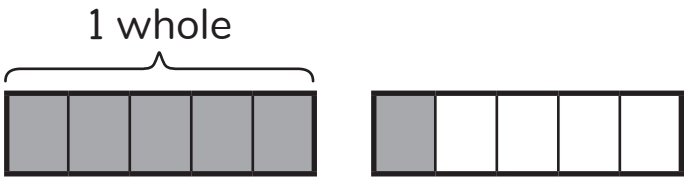
$27 = (4 \times 6) + 3$

$(6 \times 4) + 3 = 27$

2 List all the factor pairs of 48.

1 and 48, 2 and 24, 3 and 16, 4 and 12, 6 and 8

3 What number does this model represent? Compose the number with unit fractions.



$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{6}{5}$

4 Dani is 4'4" tall and her teacher is 5'3" tall.
How many inches taller is Dani's teacher than Dani?

1 foot = 12 inches

11 inches taller

Name: _____ Date: _____


Mateo

Exploring Fractions Greater Than 1 on a Number Line

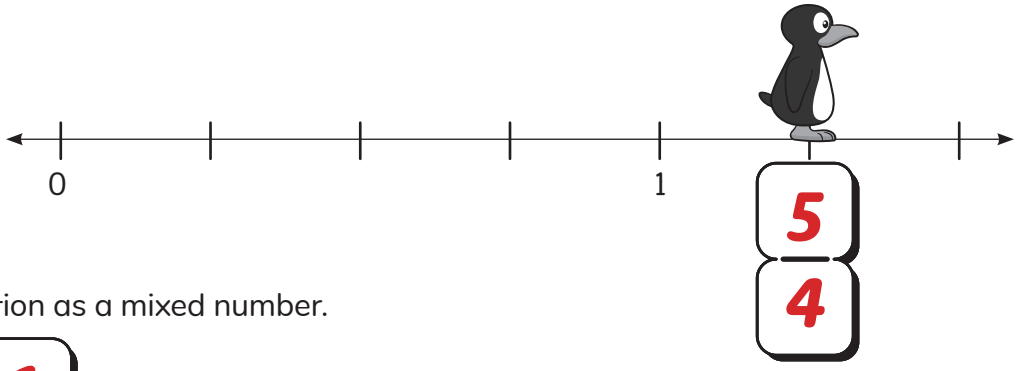
1. Write the number in standard form. $(8 \times 100{,}000) + (5 \times 1{,}000)$

805,000

2. What is the product of 376,000 × 100?

37,600,000

3. a) Where is JiJi?



b) Write JiJi's location as a mixed number.

1 1/4

4. Mateo's Art Club has $250 to spend on art supplies. The Art Club bought 5 packs of paintbrushes for $13 each and $145 worth of paint. How much money does the Art Club have left for other supplies?

$40 left

(5 × $13) + $145 = $210

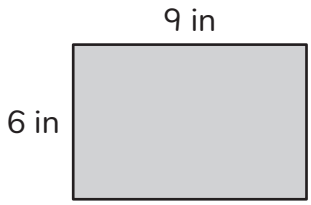
$250 – $210 = $40

Name: _____ Date: _____


Mateo

Identifying Fractions as Mixed and Whole Numbers

1 Find the perimeter and the area of the following rectangle.



$A =$ **54 sq. in**

$P =$ **30 in**

2 Which measurement most likely describes the weight of a soccer ball?

14 pounds

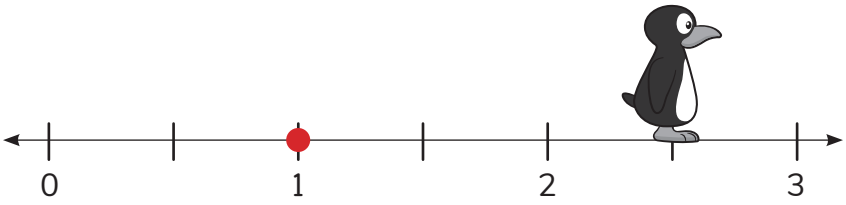
14 fluid ounces

14 ounces

14 kilograms

3 a) Where is JiJi? Write your answer as a fraction and as a mixed number.

$\frac{5}{2} = 2\frac{1}{2}$



b) Draw a point at $\frac{2}{2}$ on the number line above.

4 Mateo is painting a mural. He has 3 gallons of blue paint, 4 quarts of orange paint, and 2 quarts each of red paint and yellow paint. How much paint does Mateo have for his mural?

1 gallon (gal) = 4 quarts (qt)

5 gallons or 20 quarts

4 qt + 2 qt + 2 qt = 8 qt (orange, red, yellow)
4 qt × 3 = 12 qt (blue)

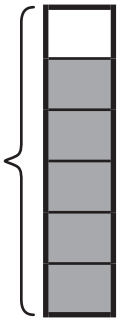
12 qt + 8 qt = 20 qt

Name: Date:

Partitioning and Iterating Fractions to Compose New Fractions

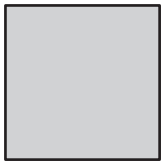
1 What number does the model represent? Compose the number with unit fractions.

1 whole



$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{5}{6}$

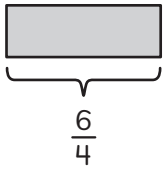
2 What is the area of the square?



P = 48 centimeters

A = **144** sq. centimeters

3 This bar is $\frac{6}{4}$.

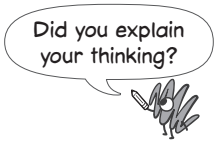


If we wanted to show 1, would it be longer or shorter than this bar? Explain your thinking.

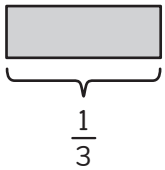
Shorter

Possible explanation:

$1 = \frac{4}{4}$ *and* $\frac{4}{4} < \frac{6}{4}$



4 This bar is $\frac{1}{3}$.



If we wanted to show 1, would it be longer or shorter than this bar? Explain your thinking.

Longer

Possible explanation:

$1 = \frac{3}{3}$ *and* $\frac{3}{3} > \frac{1}{3}$

Name: _____ Date: _____


Mateo

Using Bar Models to Decompose Numbers into Sums of Fractions

1

a) How many more squares were drawn than stars and circles?

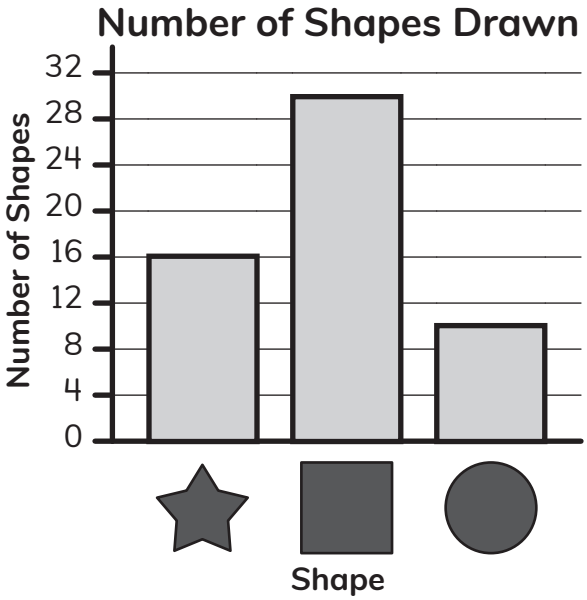
4 more squares

30 – (10 + 16) = 4

b) How many shapes were drawn in all?

56 shapes

30 + 10 + 16 = 56



2

How can you decompose $\frac{7}{4}$ into 2 fractions?

Possible answer:

$\frac{4}{4} + \frac{3}{4} = \frac{7}{4}$

3

What is the missing addend? Draw a bar model to show your thinking.

$\frac{3}{4} + \frac{2}{4} + \frac{7}{4} = 3$

Student models will vary.

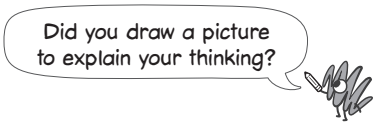
4

Mateo bought a package of sculpting clay. The whole package was divided into sixths. How can Mateo break apart the clay into 2 fractions with sixths in the denominator to store it? Draw a picture to explain your thinking.

Possible answer:

$\frac{3}{6} + \frac{3}{6}$

Student drawings will vary.



Name: _____ Date: _____


Logan

Using Number Lines to Decompose Numbers into Sums of Fractions

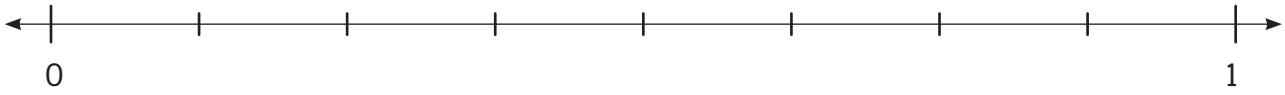
1 Complete the table.

16 oz	***32*** **oz**	***48*** **oz**	***64*** **oz**	***80*** **oz**
1 lb	2 lb	3 lb	4 lb	5 lb

2 How many pounds are equivalent to 240 ounces of cheese?

15 pounds

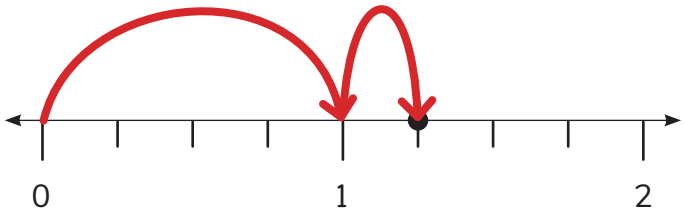
3



This number line is partitioned into

☐ fourths. ☐ fifths. ☐ sixths. ☒ eighths.

4 Show 2 jumps on the number line to make $1\frac{1}{4}$. Write an equation to represent the model.



Possible answer:

$1 + \frac{1}{4} = 1\frac{1}{4}$

5 Logan ran before and after school. She ran a total of $2\frac{3}{4}$ miles. What are 2 different ways she could have broken up the run? Show your thinking by drawing a model and writing an equation.

Possible answers:

$1 + 1\frac{3}{4} = 2\frac{3}{4}$

$\frac{3}{4} + 2 = 2\frac{3}{4}$

Student models will vary.

Name: _____ Date: _____

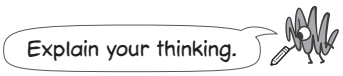

Sarah

Connecting Fractions on a Number Line to Rulers and Dot Plots

1 Draw an array to show $16 \div 4$.

Student drawings should show 4 rows of 4 objects each.

2 Is this equation true or false? $56 \div 7 = 64 \div 8$

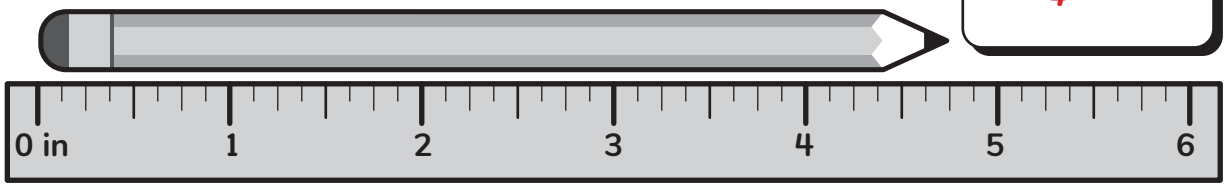


True

Possible explanation:

Each side equals 8.

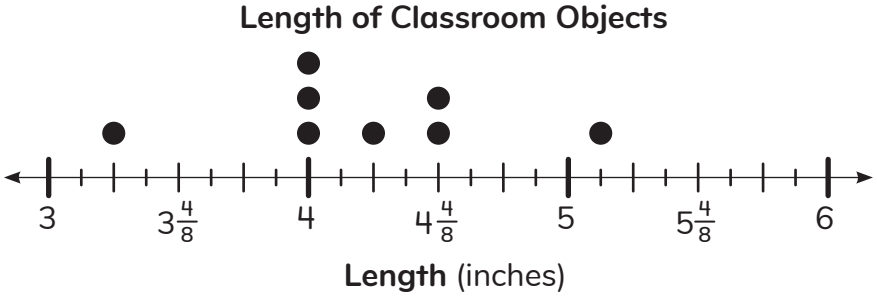
3 Find the length of the pencil.



$4\frac{3}{4}$ inches

4 How many of the classroom objects have a length of $4\frac{1}{4}$ inches?

1 classroom object

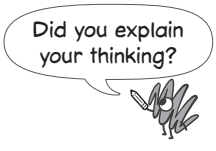


5 Sarah and her dad are cutting wood to make planting boxes for their garden. Sarah measures a piece of wood and says it is $8\frac{1}{2}$ inches long. Her dad measures it and says it is $8\frac{4}{8}$ inches long. Are their measurements the same? Explain your thinking.

Yes

Possible explanation:

The measurements are the same because $\frac{1}{2} = \frac{4}{8}$.



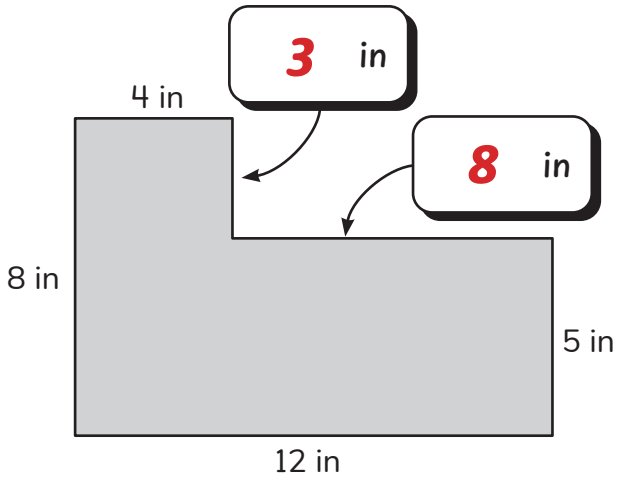
Name: _____ Date: _____

Using Bar Models to Add and Subtract Fractions with Common Denominators

Louis

1 a) Find the area of the figure.

72 square inches



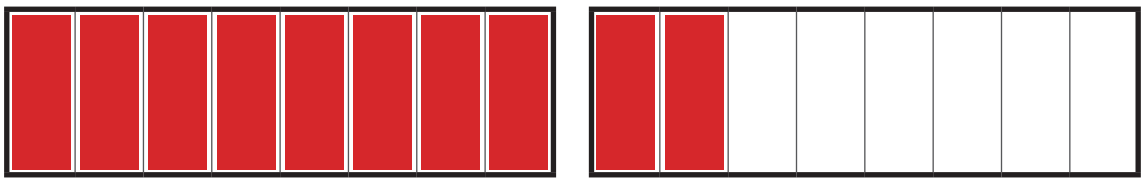
b) Find the perimeter of the figure.

40 inches

2 Use the bar models to find the value of $\frac{3}{8} + \frac{7}{8}$.

Possible answers:

$\frac{10}{8}$, $1\frac{2}{8}$, $1\frac{1}{4}$



3 Draw a bar model to model and find the value of $\frac{4}{3} - \frac{2}{3}$.

$\frac{2}{3}$

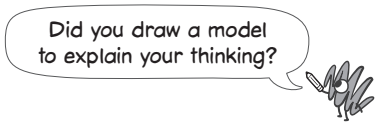
Student models will vary.

4 Louis and his dad made a big batch of soup. They used $\frac{4}{6}$ cup of kidney beans and $\frac{5}{6}$ cup of red beans. What is the total amount of beans they used in the soup? Draw a bar model to explain your thinking.

$\frac{9}{6}$ cups or $1\frac{3}{6}$ cups or $1\frac{1}{2}$ cups

Student models should show 2 whole bars that are each divided into 6 equal parts with a total of 9 parts shaded.

Possible explanation:
4 sixths and 5 sixths make a total of 9 sixths, which is 1 whole and 3 more sixths or $1\frac{3}{6}$.



Name: _____ Date: _____

Using Number Lines to Add and Subtract Fractions with Common Denominators

1 Circle the expression that has a quotient of about 8.

$8 \div 3$

$34 \div 8$

$49 \div 6$

$13 \div 5$

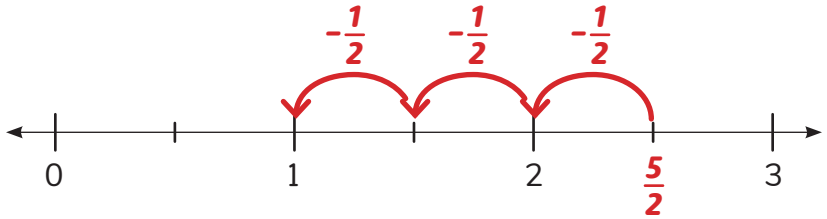
2 What rule can be used to find the output number when the input number is given?

Input	Output
10	20
15	25
20	30
35	45

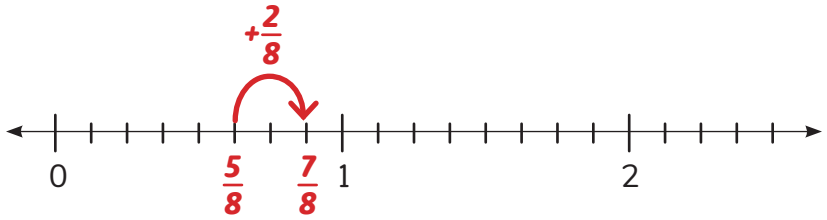
Rule: + 10

3 Use the number line to solve.

a) $\frac{5}{2} - \frac{3}{2} =$ $\frac{2}{2}$ or 1



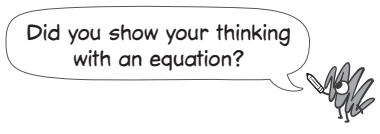
b) $\frac{5}{8} + \frac{2}{8} =$ $\frac{7}{8}$



4 JiJi biked $\frac{9}{10}$ km. Paco biked $\frac{7}{10}$ km. How much farther did JiJi bike than Paco? Show your thinking with an equation.

$\frac{2}{10}$ or $\frac{1}{5}$ km farther

$\frac{9}{10} - \frac{7}{10} = \frac{2}{10}$

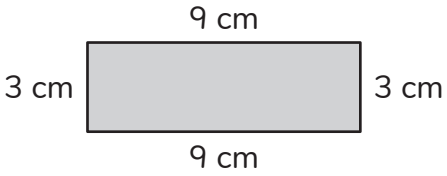


Name: _____ Date: _____


Dani

Solving Problems with Fractions of Sets

1 Write 2 equations for finding the perimeter of the rectangle.



Possible answers:

9 + 3 + 3 + 9 = 24 cm

(2 × 9) + (2 × 3) = 24 cm

2 Complete the statement. 795,630

The digit 9 in the number above has a value of 9 × ***10,000***.

3 a) What fraction of the backpacks are blue or green? Write an equation to explain your thinking.

$\frac{2}{11} + \frac{5}{11} = \frac{7}{11}$

b) What fraction of the backpacks are not blue? Write an equation to explain your thinking.

$\frac{5}{11} + \frac{4}{11} = \frac{9}{11}$ or $\frac{11}{11} - \frac{2}{11} = \frac{9}{11}$

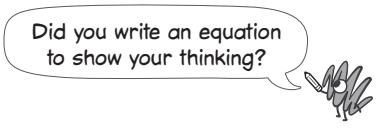
Number of Backpacks by Color

Green	
Blue	
Red	

Each  means 1 backpack.

4 Dani is helping to set up for a family party. She has 42 flowers and will put 7 flowers in each vase. How many vases does she need? Write an equation to show how your thinking.

42 ÷ 7 = 6 vases

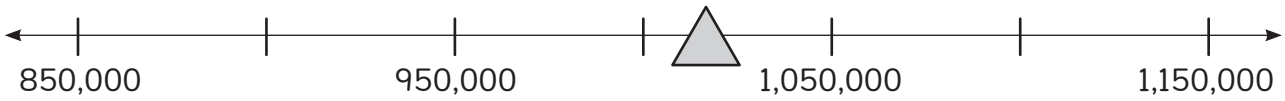


Name: _____ Date: _____

Solving Word Problems with Fractions

1 What number could represent the triangle?

Possible answer: **1,020,000**



2 Draw a bar model and solve. $\frac{9}{5} + \frac{5}{5} =$ $\frac{14}{5}$ or $2\frac{4}{5}$

Possible model:

3 To prepare for the *Wacipi*, Grass Dancers decorate their outfits with long fringe to represent prairie grass swaying in the wind. One Grass Dancer decided to have 12 bunches of fringe for his regalia. He prepared $\frac{4}{12}$ of the total fringe on Monday and another $\frac{5}{12}$ of the total fringe on Tuesday. What fraction of the fringe bunches does the dancer still need to prepare?

Use f to represent the unknown information.

$\frac{4}{12} + \frac{5}{12} = \frac{9}{12}$

$f = \frac{12}{12} - \frac{9}{12}$

$f = \frac{3}{12}$ or $\frac{1}{4}$

Name: _____ Date: _____


Sarah

Adding Fractions and Mixed Numbers with Common Denominators

1 Solve.

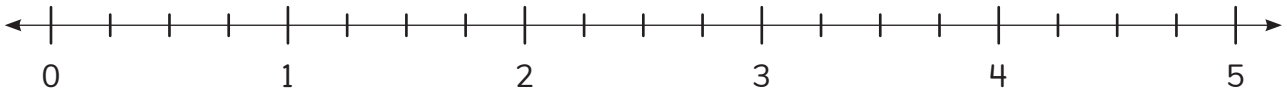
$642 \times 6 =$ **3,852** $398 \times 3 =$ **1,194**

2 Complete each statement.

a) 48 is **8** times as much as 6.

b) 80 is **16** times as much as 5.

3 Use the number line to find the value of $2\frac{1}{4} + \frac{5}{4}$.



$2\frac{6}{4} = 3\frac{2}{4} = 3\frac{1}{2}$

4 Find the value of $\frac{5}{3} + 2\frac{2}{3}$ using a bar model or number line.

$\frac{5}{3} + 2\frac{2}{3} = 2\frac{7}{3} = 4\frac{1}{3}$

Student models will vary.

5 Sarah and her dad use $2\frac{4}{6}$ bags of soil to fill the vegetable beds in their garden. They use $\frac{8}{6}$ bags of soil to fill the flower beds. What is the total amount of soil they use? Show your thinking.

4 bags

$2\frac{4}{6} + \frac{8}{6} = 2\frac{12}{6} = 2 + 2 = 4$ bags

Name: _____ Date: _____


Dani

Subtracting Fractions and Mixed Numbers with Common Denominators

1. Solve. $56 \div d = 7$ $64 \div m = 8$

$d =$ **8** $m =$ **8**

2. A runner was training for a race. On Saturday, she ran 7 miles. She ran 6 times as far during the next week as she did on Saturday. How far did she run during the next week?

Show your thinking.

42 miles

Student work will vary.

3. Circle the numbers or expressions that are equivalent to $\frac{14}{3}$.

$\frac{3}{3} + \frac{3}{3} + \frac{3}{3} + \frac{3}{3} + \frac{2}{3}$ $1 + \frac{3}{3} + \frac{1}{3}$ $4\frac{2}{3}$ $\frac{7}{3} + \frac{3}{3} + \frac{2}{3}$

4. Use a number line or bar model to find the value of $\frac{11}{4} - 1\frac{2}{4}$.

$1\frac{1}{4}$ or $\frac{5}{4}$

Student models will vary.

5. Dani had $\frac{18}{6}$ bags of fry bread. She used $1\frac{2}{6}$ bags with the *wojapi* she made. How much fry bread is left? Show your thinking.

$\frac{18}{6} - 1\frac{2}{6} = \frac{10}{6} = 1\frac{4}{6} = 1\frac{2}{3}$ bags

Student explanations will vary.

Did you show your thinking?

Name: _____ Date: _____


Dani

Adding Mixed Numbers with Common Denominators

1 What is the value of the underlined digit in 3<u>4</u>5,218,907?

40,000,000

2 The first number in the pattern is 34. The rule is to add 14. Write the first 4 numbers in the pattern.

34, 48, 62, 76

3 a) Convert $\frac{21}{8}$ to a mixed number.

$2\frac{5}{8}$

b) Convert $\frac{14}{4}$ to a mixed number.

$3\frac{2}{4}$ or $3\frac{1}{2}$

c) Convert $\frac{25}{6}$ to a mixed number.

$4\frac{1}{6}$

4 Solve.

$2\frac{3}{5} + 4\frac{4}{5} =$ $6\frac{7}{5}$ or $7\frac{2}{5}$

$1\frac{1}{6} + 3\frac{5}{6} =$ $4\frac{6}{6}$ or 5

5 Dani and her brother built shelves for the local library. They used $1\frac{4}{8}$ boxes of nails for one shelf and $1\frac{6}{8}$ boxes of nails for another shelf. How many boxes of nails did they use altogether? Show your thinking.

$3\frac{1}{4}$ boxes of nails

Possible explanation:

$1\frac{4}{8} + 1\frac{6}{8} = \frac{12}{8} + \frac{14}{8} = \frac{26}{8} = 3\frac{2}{8} = 3\frac{1}{4}$

Name: _____ Date: _____


Louis

Subtracting Mixed Numbers with Common Denominators

1 Complete each statement.

3,000 is 10 times as much as 300.

30,000 is 100 times as much as 300.

2 A teacher wants to buy stickers for 104 fifth-grade students so they can decorate their notebooks. The teacher wants each student to have 6 stickers. Packages come with 10 stickers each. How many packages does the teacher need to buy to make sure every student has enough stickers? Show your thinking.

63 packages

Student work will vary.

3 Solve.

$3\frac{3}{5} - 2\frac{4}{5} =$ **$\frac{4}{5}$**

$4\frac{1}{3} - 1\frac{2}{3} =$ **$2\frac{2}{3}$ or $\frac{8}{3}$**

$5\frac{2}{4} - 2\frac{3}{4} =$ **$\frac{11}{4}$ or $2\frac{3}{4}$**

4 Louis has $3\frac{3}{4}$ pounds of flour that he wants to use to make muffins. The recipe calls for $1\frac{1}{4}$ pounds of flour. How much flour will Louis have left? Show your thinking.

$2\frac{1}{2}$ pounds of flour

Possible explanation:

$3\frac{3}{4} - 1\frac{1}{4} = \frac{10}{4} = \frac{5}{2} = 2\frac{1}{2}$

Did you show your thinking?

Name: _____ Date: _____


Candace

Using Dot Plots to Solve Mixed Number Addition and Subtraction Problems

1 Write 1,000,000,000 in expanded notation.

1 × 1,000,000,000

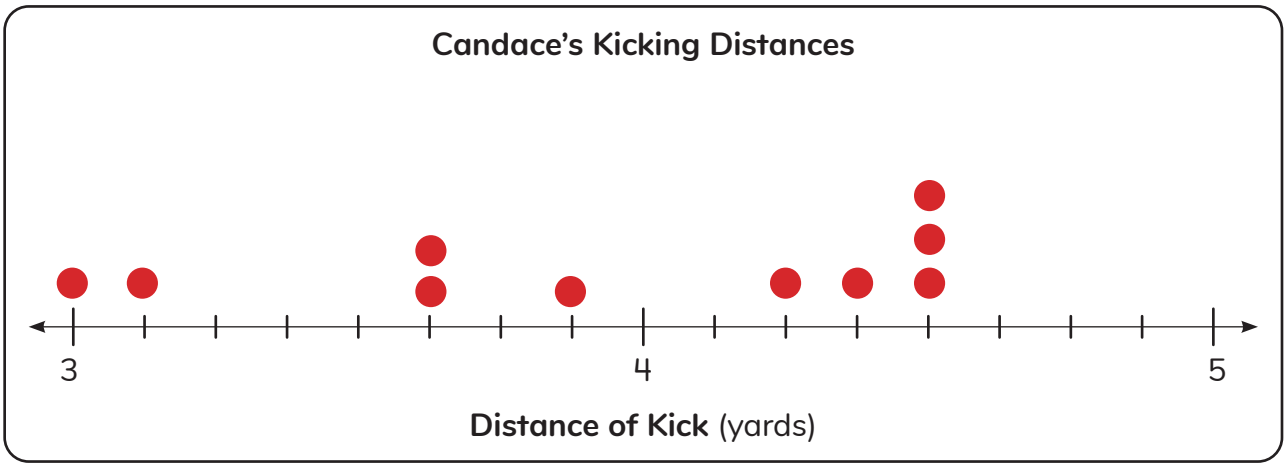
2 Use < , > , or = to compare. 1,000,000,000 **>** 1,000,000

3 Candace recorded the distances that she kicked a soccer ball.

Distance (yards)

3	$3\frac{1}{8}$	$3\frac{5}{8}$	$4\frac{4}{8}$	$4\frac{2}{4}$
$4\frac{3}{8}$	$4\frac{1}{2}$	$3\frac{7}{8}$	$3\frac{5}{8}$	$4\frac{1}{4}$

a) Using the data listed in the table, create a dot plot.



b) Based on the data she collected, how many times did Candace kick the soccer ball at least $4\frac{1}{4}$ yards?

5 times

Topic 8

Exploring Fraction Thinking and Discovering Decimals

Recommended ST Math Objectives:

Fractions - Equivalence and Ordering
Fraction and Decimal Equivalence
Mixed Numbers

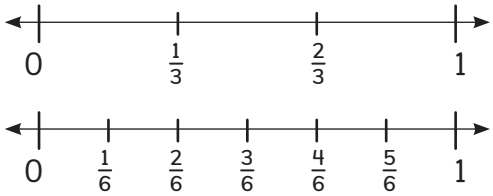
Name: _____ Date: _____


Brian

Using Fraction Strips to Explore Equivalent Fractions

1 Solve. **938** = 5,628 ÷ 6 **856** = 3,424 ÷ 4

2 Name 2 sets of equivalent fractions that these number lines show.



$\frac{1}{3} = \frac{2}{6}$ $\frac{2}{3} = \frac{4}{6}$

3 Complete the table.

1 whole	$\frac{1}{1}$	$\frac{4}{4}$	$\frac{8}{8}$	$\frac{12}{12}$
2 wholes	$\frac{2}{1}$	$\frac{8}{4}$	$\frac{16}{8}$	$\frac{24}{12}$
3 wholes	$\frac{3}{1}$	$\frac{12}{4}$	$\frac{24}{8}$	$\frac{36}{12}$
10 wholes	$\frac{10}{1}$	$\frac{40}{4}$	$\frac{80}{8}$	$\frac{120}{12}$

4 Is $\frac{3}{4}$ equivalent to $\frac{5}{8}$? Explain your thinking.

No

Possible explanation:

$\frac{3}{4} = \frac{6}{8}$

$\frac{6}{8}$ *and* $\frac{5}{8}$ *are not equivalent.*

5 Brian is baking with his grandpa. They need to measure out $\frac{1}{4}$ cup of raisins. Brian only has the $\frac{1}{8}$ measuring cup. Is Brian able to measure $\frac{1}{4}$ cup of raisins? Explain your thinking.

Yes

Possible explanation:

If Brian measures $\frac{1}{8}$ *cup of raisins two times, he will have* $\frac{2}{8}$*, which is equivalent to* $\frac{1}{4}$*.*

Did you explain your thinking?

Name: Date:

Using Bar Models to Make Equivalent Fractions

1 a) Estimate the difference of 4,006 – 2,387.

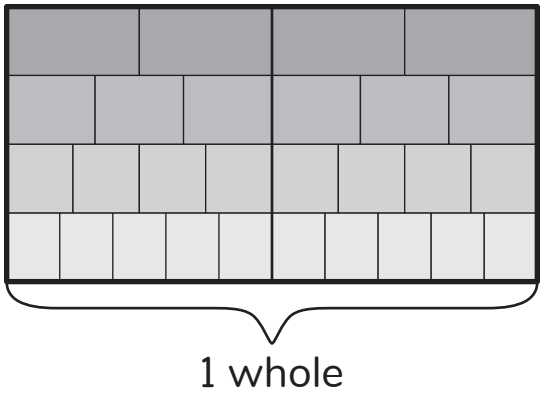
Possible estimate:

2,000

b) Find the actual difference of 4,006 – 2,387.

1,619

2 Write an equation to represent the equivalent fractions in the bar model.



$\frac{4}{4} = \frac{6}{6} = \frac{8}{8} = \frac{10}{10}$

3 Is $\frac{12}{5}$ equivalent to $\frac{24}{10}$? Explain your thinking.

Yes

Possible explanation:

Multiplying the numerator and denominator of $\frac{12}{5}$ by 2 equals $\frac{24}{10}$.

4 A critter folded a piece of paper into 5 equal sections. If the critter wants to color $\frac{4}{10}$ of the paper's sections red, how many of the sections should the critter color? Draw a picture to show your thinking.

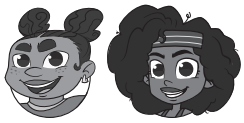
2 sections

Student drawings will vary.

Did you draw a picture to explain your thinking?

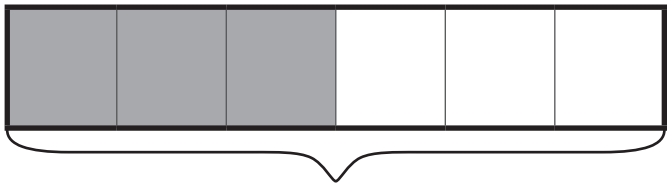
Name: _____ Date: _____

Using Multiplication to Make Equivalent Fractions



1 Complete the equation.

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} =$$



2 Solve. 2,254 = 98 × 23 6,688 = 76 × 88

3 Find an equivalent fraction.

$$\frac{(3 \times 3)}{(4 \times 3)} = \frac{9}{12}$$

4 Find an equivalent fraction.

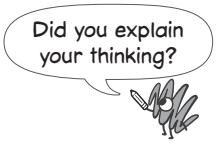
$$\frac{(5 \times 5)}{(2 \times 5)} = \frac{25}{10}$$

5 Sarah told Logan that she knows a fraction is equivalent to 1 if the numerator and the denominator are the same number. Do you agree with Sarah? Explain your thinking.

Yes

Possible explanation:

Yes, because when the numerator and the denominator are the same, there are the same number of parts as the total number of parts in a whole.



Name: _____ Date: _____


Logan

Using Multiplicative Relationships to Identify Equivalent Fractions

1 Find the quotient using the standard algorithm.

$$\begin{array}{r} 603 \\ 6\overline{)3{,}618} \\ -\,3{,}600 \\ \hline 18 \\ -\,18 \\ \hline 0 \end{array}$$

2 Solve.

$$\begin{array}{r} {\scriptstyle 12\ 11} \\ {\scriptstyle 8\ \not{2}\ \not{1}\ 15} \\ \not{9},\not{3}\not{2}\not{5} \\ -\quad 728 \\ \hline 8{,}597 \end{array}$$

3 Create your own fraction and compare it to the benchmark fraction $\frac{1}{2}$.

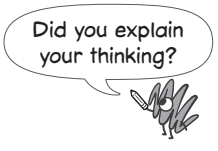
$\square$ (18) ○ $\frac{1}{2}$

Student answers will vary.

4 Logan ran $\frac{7}{8}$ mile on Saturday and $\frac{5}{8}$ mile on Sunday.
How far did Logan run during both days? Explain your thinking.

$\frac{12}{8}$ miles or $1\frac{4}{8}$ miles or $1\frac{1}{2}$ miles

$\frac{7}{8} + \frac{5}{8} = \frac{12}{8} = 1\frac{4}{8} = 1\frac{1}{2}$



Name: _____ Date: _____


Louis

Using Division to Make Equivalent Fractions

1 Complete each statement.

a) 81 is **9** times as much as 9.

b) 63 is **7** times as much as 9.

2 What is the value of the underlined digit in 9<u>8</u>3,256?

80,000

3 Find an equivalent fraction.

$$\frac{(6 \div \boxed{2})}{(8 \div \boxed{2})} = \frac{\boxed{3}}{4}$$

4 Find an equivalent fraction.

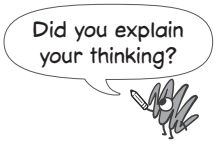
$$\frac{(4 \div \boxed{4})}{(12 \div \boxed{4})} = \frac{\boxed{1}}{3}$$

5 Louis folded a strip of paper into 3 equal parts. He got a new strip of paper and folded it so that he could make fraction pieces that are equivalent to thirds. Did Louis fold the new strip of paper into fourths, fifths, or sixths? Explain your thinking.

sixths

Possible explanation:

Six is a multiple of 3, so a paper folded into sixths would make fraction pieces that are equivalent to thirds.



Name: _____ Date: _____


Mateo

Using Equivalent Fractions to Solve Problems

1 A list of numbers is shown.

100,000,000 1,000,000,000 1,000,000

Which comparison lists these numbers from least to greatest?

1,000,000 < 100,000,000 < 1,000,000,000

1,000,000,000 < 100,000,000 < 1,000,000

2 Circle the 2 fractions that are equivalent. $\frac{5}{6}$ $\frac{2}{3}$ $\frac{8}{12}$

3 Fill in the missing numbers.

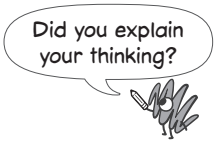
$$\frac{2}{5} = \frac{\boxed{4}}{10} = \frac{8}{\boxed{20}} = \frac{40}{\boxed{100}}$$

4 Mateo needs an equivalent amount of purple paint and green paint to finish his mural. He has $\frac{2}{5}$ cup of purple paint. He sees 3 bottles of green paint. One bottle has $\frac{3}{8}$ cup of green paint. Another bottle has $\frac{4}{9}$ cup of green paint. A third bottle has $\frac{6}{15}$ cup of green paint. Which bottle of green paint should Mateo use? Explain your thinking.

the third bottle

Possible explanation:

Mateo should use the third bottle, which has $\frac{6}{15}$ cup of paint, because $\frac{6}{15}$ is equivalent to $\frac{2}{5}$.



Name: _____ Date: _____


Anjali

Relating Fractions to Decimals

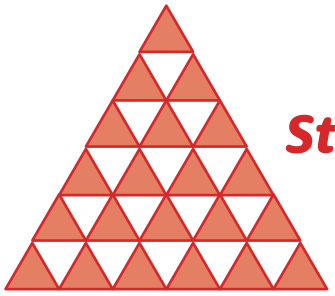
1 Use the model. What is the missing addend?

$\frac{2}{3} + \frac{1}{3} + \boxed{\frac{6}{3}} = 3$

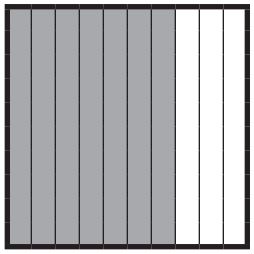

= 1 whole

2 What would Step 6 look like in this pattern?

Step 1 Step 2 Step 3

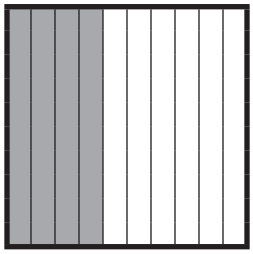

Step 6

3 Write each model in words, as a fraction, and as a decimal.


seven-tenths

$\frac{7}{10}$

0.7


four-tenths

$\frac{4}{10}$

0.4

4 Write each fraction as a decimal.

$2\frac{3}{10}$

Ones	.	Tenths
2	.	3

$6\frac{5}{10}$

Ones	.	Tenths
6	.	5

5 On Monday, Anjali read $4\frac{3}{10}$ chapters of a mystery book. She recorded this amount as a decimal in her reading log. What decimal did Anjali write for Monday? Explain your thinking.

4.3

Possible explanation:

4.3 = four and three-tenths, or $4\frac{3}{10}$.

Name: _____ Date: _____

Extending Place Value to Hundredths

1 Find an equivalent fraction.

$$\frac{(4 \times \boxed{5})}{(3 \times \boxed{5})} = \frac{\boxed{20}}{15}$$

2 Find an equivalent measurement.

1 pound (lb) = 16 ounces (oz)

Possible answer:

4 lb 18 oz = 5 lb 2 oz

3 Write these numbers in expanded notation.

a) 17.24 = (1 × 10) + (7 × 1) + (2 × 0.1) + (4 × 0.01)

b) 21.35 = (2 x 10) + (1 x 1) + (3 x 0.1) + (5 x 0.01)

4 Finish each statement.

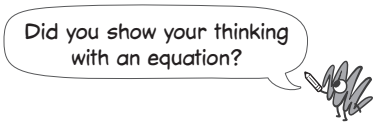
a) 0.04 is one tenth / 10 times as much as 0.4.

b) 0.4 is one tenth / 10 times as much as 0.04.

5 There are 4 critters with birthdays this week and 30 balloons for decorating. How many balloons can JiJi tie to each critter's desk so that all 4 critters have the same number of balloons? How many balloons will JiJi have left over? Explain your thinking with an equation.

8 balloons at each desk with 2 balloons left over

34 ÷ 4 = 8 R2



Name: _____ Date: _____


Logan

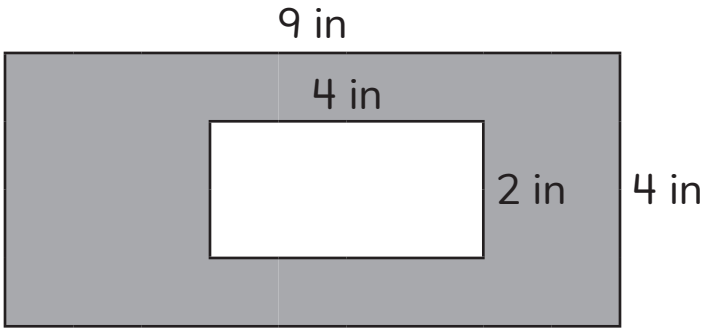
Relating Tenths and Hundredths

1 Solve.

$7{,}231 - 4{,}983 =$ **2,248**

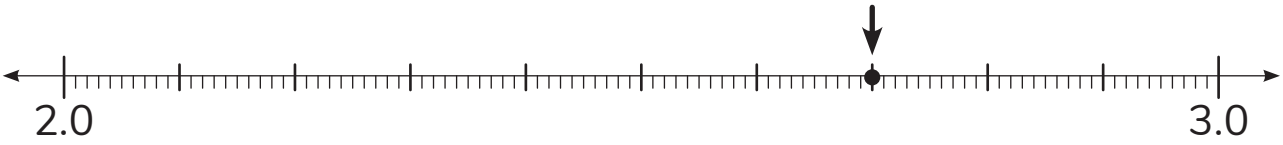
$6{,}732 - 4{,}568 =$ **2,164**

2 What is the area of the shaded part of the figure?



28 square inches

3 What are 2 ways to name the number represented as a point on this number line?



2.7 and 2.70

4 Write each fraction in decimal form.

$\frac{7}{10} =$ **0.7**

$\frac{34}{100} =$ **0.34**

$\frac{16}{10} =$ **1.6**

5 Logan ran 1.8 miles after school on Tuesday. Write the distance as a fraction.

Possible answer:

$1\frac{8}{10}$ ***miles***

Name: Date:

Representing Distance with Fractions and Decimals

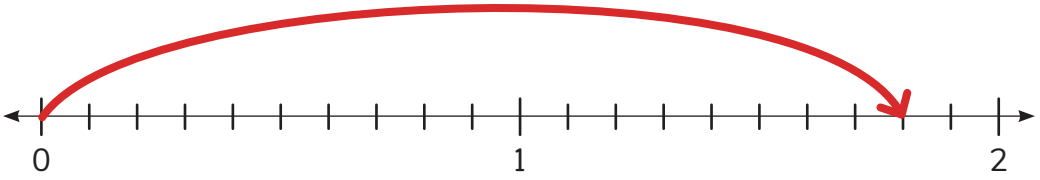
1. Solve. $4\frac{1}{6} + 2\frac{5}{6} =$ **7**

2. Round 581,938 to the following places.

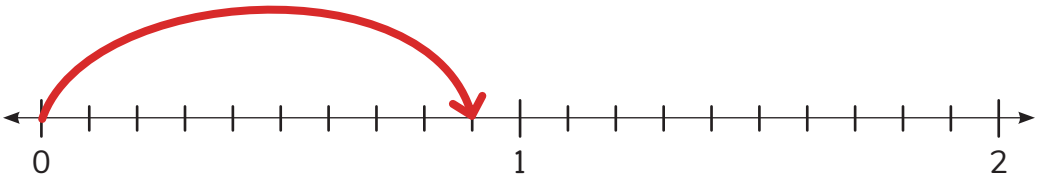
580,000	**582,000**	**581,940**
nearest ten thousand	nearest thousand	nearest ten

3. Draw a hop on each number line to show each distance.

a) 1.8 km



b) $\frac{9}{10}$ km



4. Over the holiday weekend, the zoo had the following visitor numbers.

Number of Weekend Visitors at the Zoo

Saturday	Sunday
50,427	48,924

The record number of visitors at the zoo in one weekend is 100,000. Did the zoo beat their record? Show how you know.

Yes, the zoo beat their record.

```
  50,427
+ 49,924
 100,351
```

100,351 > 100,000

Name: _____ Date: _____


Mateo

Using Common Denominators and Common Numerators to Compare and Order Fractions

1 Complete each measurement conversion.

2,000 grams = 2 kilograms

5,000 grams = 5 kilograms

2 Solve.

$10 \times 12 =$ **120**

$11 \times 12 =$ **132**

$12 \times 12 =$ **144**

3 Use $<$, $>$, or $=$ to compare.

$\frac{2}{3}$ **>** $\frac{2}{5}$

$\frac{5}{8}$ **>** $\frac{3}{8}$

4 Fill in the numerators to make each comparison true.

$\frac{4}{6} < \frac{\text{any number greater than 4}}{6}$

Possible answer: $\frac{3}{4} < \frac{4}{4}$

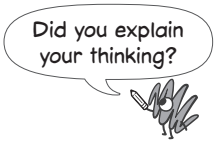
5 Mateo painted a picture for his classroom. He covered $\frac{3}{5}$ of the painting in purple paint and covered 0.2 of the painting in gray paint. Which color covers more of the painting? Explain your thinking.

purple

Possible explanation:

$\frac{3}{5} = \frac{6}{10}$ *and* $0.2 = \frac{2}{10}$.

$\frac{6}{10} > \frac{2}{10}$, *so there is more purple than gray.*



Name: Date:

Using Benchmarks to Compare and Order Fractions

1. a) Round each addend in 33,876 + 96,231 to the nearest thousand and estimate the sum.

130,000

b) Find the precise sum.

130,107

c) How did the precise sum relate to your estimate?

Possible answer:

The estimate was close to the actual answer.

2. Circle the fractions that are less than $\frac{1}{2}$.

$\frac{8}{20}$ $\frac{3}{5}$ $\frac{5}{12}$ $\frac{2}{5}$

3. Order the fractions from least to greatest.

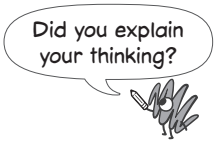
$\frac{1}{2}$ $\frac{5}{6}$ $\frac{3}{4}$ $\frac{1}{3}$

$\frac{1}{3}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{5}{6}$

4. A critter knocked the following fraction cards off the class number line: $\frac{2}{3}$, $\frac{3}{6}$, $\frac{1}{12}$, and $\frac{9}{12}$. The critter wants to put the cards on the number line from least to greatest. In what order should the cards be placed on the number line? Explain your thinking.

$\frac{1}{12}$ $\frac{3}{6}$ $\frac{2}{3}$ $\frac{9}{12}$

Student explanations will vary.



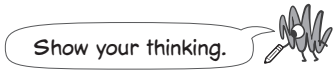
Name: _____ Date: _____


Sarah

Making Common Denominators to Compare and Order Fractions

1 Solve. $5\frac{3}{6} + 7\frac{2}{6} =$ ***$12\frac{5}{6}$***

2 A reading teacher has $890 to buy new books.
If each book costs $8, how many books can the teacher buy?



111 books

Possible explanation:
890 ÷ 8 = 111 R2
The teacher has enough money to buy 111 books.

3 Use $<$, $>$, or $=$ to compare. $\frac{7}{12}$ ***<*** $\frac{5}{8}$

4 Fill in the blanks to create fractions that are ordered from least to greatest.

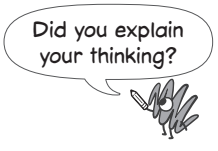
$\frac{\square}{5} < \frac{\square}{2} < \frac{\square}{\square}$

Student answers will vary.

5 Sarah is serving 2 casseroles that are the same size at the spring cleanup event. One casserole has already been cut into twelfths, and the other has been cut into eighths. She wants to cut both casseroles into smaller pieces that are all the same size. What fraction-sized pieces should Sarah use? Explain your thinking.

Possible answer:
The casseroles should each be cut into twenty-fourths.

Possible explanation:
A common multiple of 12 and 8 is 24.



Name: _____ Date: _____


Candace

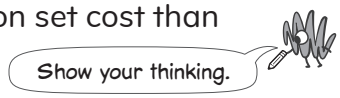
Comparing and Ordering Fractions to Solve Problems

1 Complete each statement.

a) 500 is 10 times as much as **50**.

b) 500 is 100 times as much as **5**.

2 The gym teacher bought a new football for $6. She bought a new badminton set for $42. How many times as much did the badminton set cost than the football?



7 times

42 = 7 × 6

3 Here is the data from the soccer team's most recent game. Who was the best goal scorer in the game?

Player	Goals Made	Total Shots Taken	Fraction of Shots That Were Goals
Player A	5	8	$\frac{5}{8}$
Player B	3	4	$\frac{3}{4}$
Player C	5	6	$\frac{5}{6}$

Player C was the best.

4 Write 2 fractions that are between $\frac{1}{3}$ and $\frac{2}{2}$.

Student answers will vary.

5 Candace rode her bike $\frac{4}{8}$ mile on Monday. She rode $\frac{2}{6}$ mile on Tuesday. She rode $\frac{11}{12}$ mile on Wednesday.

a) On which day did Candace ride the farthest distance? Explain your thinking.

Possible answer:

She rode the farthest distance on Wednesday. $\frac{11}{12}$ of a mile is a bit less than 1 mile, while $\frac{4}{8}$ mile is half a mile and $\frac{2}{6}$ is a lot less than a half.

b) On which day did she ride the shortest distance? Explain your thinking.

Possible answer:

She rode the least distance on Tuesday. $\frac{2}{6}$ has a much smaller numerator than the denominator, so it is the closest to 0.

Name: Date:

Comparing and Ordering Decimals

1. Circle the numbers that are factors of 24.

2 6 7 8 12

2. Write 3,982 in word form.

three thousand nine hundred eighty-two

3. Write a decimal that makes the comparison true.

Possible answer:

$1.3 < \boxed{1.31} < 1.4$

4. What number might be represented by the point on the number line?

Possible answer:

2.57

5. A critter is thinking of a mystery number. The number is a decimal greater than 1.7 but less than 1.8. What could the critter's mystery number be? Explain your thinking.

Possible answer:

1.75

Possible explanation:

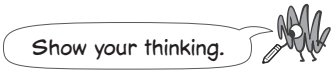
1.75 has the same units and tenths as 1.7 but has more hundredths, so it is greater. 1.75 is less than 1.8 because the units are the same and the tenths are less.

Name: Date:

Comparing and Ordering Fractions and Decimals

1. A rectangle has an area of 27 square inches. Its width is 3 inches.

   a) What is the length of the rectangle?

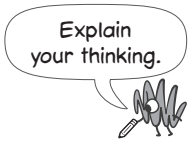


   9 inches

   b) What is the perimeter of the rectangle?

   24 inches

2. Would you rather play your favorite game for $8\frac{3}{5}$ minutes or 8.75 minutes?



   8.75 minutes

   Possible explanation:
   0.75 is $\frac{3}{4}$ as a fraction, and that is greater than $\frac{3}{5}$, so 8.75 minutes is more time than $8\frac{3}{5}$ minutes.

3. Order the numbers from least to greatest. $1\frac{1}{10}$ $1\frac{2}{5}$ 1.01 1.25

   1.01, $1\frac{1}{10}$, 1.25, $1\frac{2}{5}$

4. Would you rather have 0.80 of your homework left to do or $\frac{3}{4}$ of your homework? Explain your thinking.

   $\frac{3}{4}$ of my homework

   Possible explanation:
   $\frac{3}{4}$ is the same as 0.75, which is less than 0.80.
   I would rather have less homework left to do.

Topic 9

Extending Financial Literacy

Recommended ST Math Objectives:

Decimal Addition and Subtraction
Comparing Decimals
Fraction and Decimal Equivalence

Name: _____ Date: _____

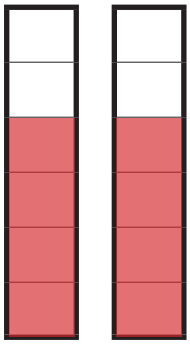

Mateo

Adding Tenths and Hundredths

1 Use the model to show $\frac{4}{6} + \frac{4}{6}$.

Possible answer:

4 boxes in each stack are shaded.



2 A water pitcher has a volume of 8 cups. Is the volume of 4 pitchers greater than 4 quarts?

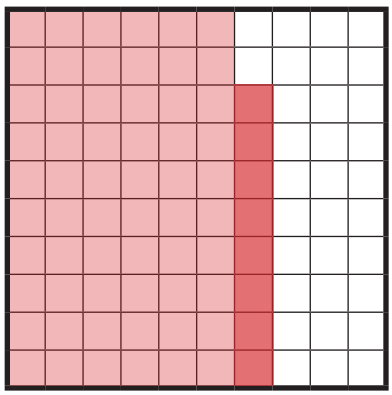
1 pint = 2 cups
2 pints = 1 quart

Yes

Possible explanation:

4 pitchers that each hold 8 cups is a total of 32 cups. 1 quart is 4 cups, so 4 quarts is only 16 cups.

3 Color in the model to solve.



$0.6 + \frac{8}{100} =$ ***0.68*** ***or*** $\frac{68}{100}$

4 Mateo and Arturito walked from Pawty City to the dog park before walking to Pet Paradise. Find the distance they walked as a decimal.

$\frac{6}{10}$ km + $\frac{24}{100}$ km = $\frac{84}{100}$ km = ***0.84*** km

5 A critter is working on coloring in all of the squares in a 100 grid. It colored $\frac{5}{100}$ of the grid in the morning and 0.4 of the grid in the afternoon.

a) What is the total amount of the grid the critter has colored?

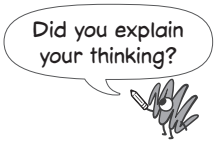
0.45 of the grid

b) Is the critter more or less than halfway finished coloring the grid? Explain your thinking.

0.45 has been colored, so the critter is less than halfway finished with the grid.

Possible explanation:

$\frac{5}{100}$ = 0.05. 0.05 + 0.4 = 0.45. 0.45 is less than half because half is 0.5.

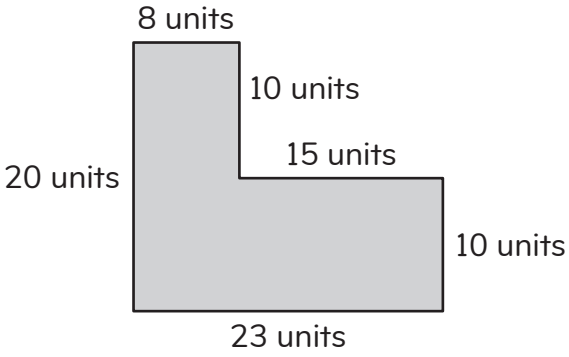


Name: _____ Date: _____


Mateo

Using Models to Add and Subtract Decimals

1 Find the area of the figure.



$A =$ **310** square units

2 Find the product.

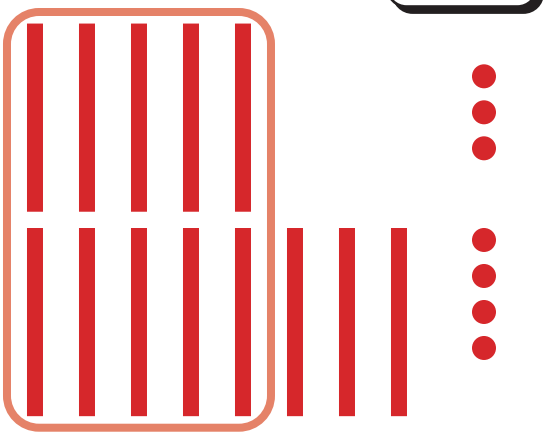
327×4

1,308

3 Draw base ten blocks to solve.

$0.73 - 0.46 =$ **0.27**

$0.53 + 0.84 =$ **1.37**



4 Mateo walked his dog $\frac{5}{10}$ km in the morning and 0.8 km in the afternoon. How far did Mateo walk his dog in all? Show your thinking.

$\frac{5}{10} + 0.8 = \frac{5}{10} + \frac{8}{10} = \frac{13}{10}$ km

Name: _____ Date: _____


Hannah

Using Place Value Strategies to Add and Subtract Decimals

1 Find the perimeter of the rectangle.

$P =$ **38** in

2 Use $<$, $>$, or $=$ to compare.

$\frac{6}{10}$ **<** $\frac{7}{8}$

3 Find the sum of 252.4 and 33.61.

	Hundreds	Tenths	Ones	.	Tenths	Hundredths
	2	**5**	**2** (1)	.	**4** (1)	**0**
+		**3**	**3**	.	**6**	**1**
	2	**8**	**6**	.	**0**	**1**

4 Find the difference between 136.18 and 115.09.

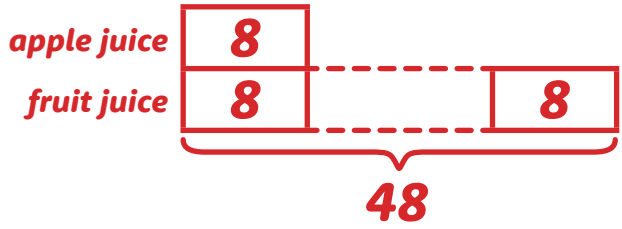
	Hundreds	Tenths	Ones	.	Tenths	Hundredths
	1	**3**	**6**	.	~~**1**~~ (0)	~~**8**~~ (18)
−	**1**	**1**	**5**	.	**0**	**9**
		2	**1**	.	**0**	**9**

5 Hannah bought 8 ounces of apple juice and 48 ounces of fruit punch at the grocery store. How many times as many ounces of fruit punch did she buy compared to apple juice? Show how you know.

6 times as many ounces

$8 \times b = 48$

Possible model:



Name: _____ Date: _____


Hannah

Creating and Interpreting Stem-and-Leaf Plots with Decimals and Mixed Numbers

1 a) Write each fraction as a decimal.

b) Circle the greatest fraction. Put a square around the decimal with the smallest value.

$\frac{148}{100}$ = **1.48**

$\frac{15}{10}$ = **1.5**

$\frac{14}{10}$ = **1.4**

2 This list shows the heights in inches of Humboldt penguins in the zoo exhibit.

a) Represent this data in a stem-and-leaf plot and in a frequency table.
25.9, 27.1, 26.4, 26.3, 25.9, 26.5, 26.8, 27.4, 27.1, 26.4, 27.3, 27.6, 26.6, 27.0, 26.2

Height of Humboldt Penguins in the Zoo Exhibit (inches)

Stem	Leaf
25	9 9
26	2 3 4 4 5 6 8
27	0 1 1 3 4 6

25|9 means 25.9 inches.

Height of Humboldt Penguins in the Zoo Exhibit

Height (inches)	**Number of Penguins**
less than 26	||
26 to less than 27	𝍸 ||
27 and greater	𝍸 |

b) What is the difference in height between the shortest penguin and the tallest penguin?

1.7 inches

3 Hannah's family sold 15 dozen eggs at the farmers market each month last year. Many eggs did they sell in all?

1 dozen = 12
1 year = 12 months

15 × 12 = 180
180 × 12 = 2,160 eggs in all

Name: _____ Date: _____

Hannah

Solving Problems with Money Using Decimal Addition and Subtraction

1 Write an expression to match the model. ***9,396 ÷ 3 or 3,132 × 3***

	3,000	+ 100	+ 30	+ 2
3	9,000	300	90	6

2 Find the product. $73 \times 32 =$ ***2,336***

3

4 Last week, Hannah collected 252 eggs from the chickens on her family's farm. She packed the eggs into cartons, with 6 eggs in each carton. If she sells 7 cartons of eggs each day, how many days will it take to sell all of the cartons?

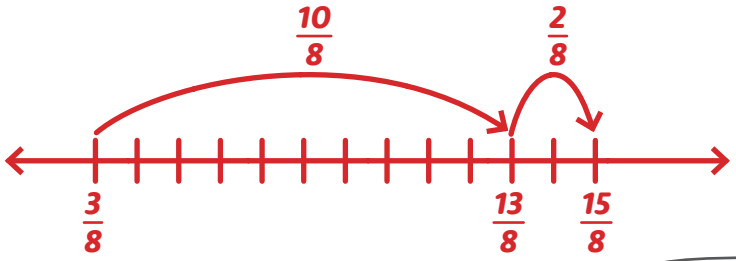
252 ÷ 6 = 42
42 ÷ 7 = 6 days

Name: _____ Date: _____


Dani

Introducing Fixed and Variable Expenses

1 Draw a number line to model and solve the problem.

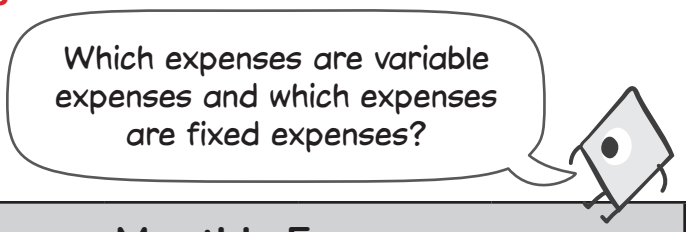


$$\frac{3}{8} + \boxed{\frac{12}{8}} = \frac{15}{8}$$

2 Complete the table.

Yards (yd)	Feet (ft)
1	3
4	12
7	21
12	36

3



Monthly Expenses			
Expenses	**Month 1**	**Month 2**	**Month 3**
Electricity	$96.58	$83.19	$110.75
Rent	$1,350.00	$1,350.00	$1,350.00
Streaming Services	$70.00	$70.00	$70.00
Groceries	$435.46	$281.53	$373.50

Electricity and groceries are variable expenses. Rent and streaming services are fixed expenses.

4 Dani is building birdhouses with her older brother.

- Each birdhouse needs 12 pieces of wood.
- Dani wants to build 7 birdhouses.
- The wood comes in bundles of 6 pieces each.

How many bundles of wood does Dani need to order? Show how you know.

12 × 7 = 84 pieces of wood needed

84 ÷ 6 = 14 bundles of wood needed

Name: Date:

Using an Allowance to Plan Spending, Saving, and Sharing

1 Create a true comparison.
Student answers will vary.

$\square$ (8) ○ $\frac{1}{2}$

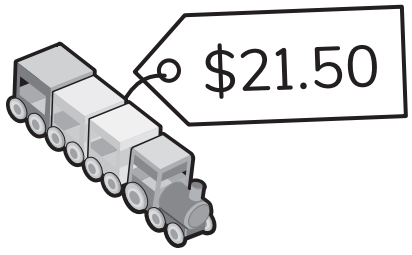
2 $400 \times 100 =$ ***40,000***

3 My weekly allowance is $4.75. If I save my whole allowance for 7 weeks, how much money will I have? ***$33.25***

Week	1	2	3	4	5	6	7
Allowance Saved	$4.75	***$9.50***	***$14.25***	***$19.00***	***$23.75***	***$28.50***	***$33.25***

How many weeks will it take me to save up enough money to buy the train set?

5 weeks



4 Third-, fourth-, and fifth-grade students across the state read a total of 66,124 pages for a statewide reading challenge.

- Third-grade students read 19,832 pages.
- Fourth-grade students read 20,389 pages.
- Fifth-grade students read the rest.

How many pages did fifth-grade students read? Show how you know.

19,832 + 20,389 = 40,221 pages read by third- and fourth-grade students

66,124 – 40,221 = 25,903 pages read by fifth-grade students

Name: _____ Date: _____

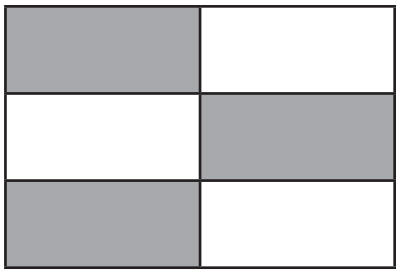

Mateo

Solving Problems Involving Business Expenses and Profit

1. What is the value of the digit 6 in the number 764,829?

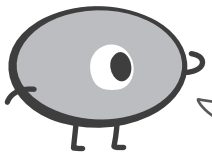
60,000

2. This model is shaded to represent a fraction. Write a fraction that is less than the value represented by the model.



$\frac{\quad}{12}$

Student answers will vary.

3. 

I purchased string for $8 and beads for $6 to make necklaces. I sold all the necklaces for $25. What is my profit?

$11

4. Mateo and his abuela painted a mural for a neighborhood art festival. Mateo painted $\frac{3}{4}$ of the mural and his *abuela* painted the rest. How much of the mural did Mateo's *abuela* paint?

$\frac{1}{4}$ of the mural

Name: _____ Date: _____


Mateo Logan

Comparing Savings Options: Home, Checking, and Savings Accounts

1 Use $<$, $>$, or $=$ to compare.

1.2 **>** $\frac{1}{2}$

2 Fill in the missing numbers to complete the equation.

$$\frac{4}{10} + \frac{38}{100} = \frac{\textbf{40}}{100} + \frac{38}{100} = \frac{\textbf{78}}{\textbf{100}}$$

3 Mateo started the month with $100 in his checking account.

At the end of the month, he had **$ 240.66** in his checking account.

Checking Account Monthly Bank Statement

Date	Transaction Description	Withdrawal	Deposit
3/4	electronic payment	$24.59	
3/15	cash		$50.00
3/31	check deposit		$115.25

4 Logan biked $\frac{3}{10}$ mile in the morning and 0.5 mile in the afternoon.

Did Logan bike farther in the morning or in the afternoon? Show how you know.

Logan biked farther in the afternoon.

Possible explanation:

$0.5 = \frac{5}{10}$ $\quad \frac{3}{10} < \frac{5}{10}$

Name: _____ Date: _____

Solving Problems and Making Financial Decisions


Logan

1 Complete the statements.

18 is a multiple of [ ].

[ ] is divisible by 4.

Student answers will vary.

2 Find the difference.

238.05 – 95.37

142.68

3 Using the information from the table, decide what to do with the income from this month.

Income This Month

	Allowance	Yard Cleanup
Week 1	$7.00	$9.50
Week 2	$7.00	$12.75
Week 3	$7.00	$15.00
Week 4	$7.00	$10.25
Total	***$28.00***	***$47.50***

Save $ [ ] in a savings account.

Donate $ [ ] to [ ].

Spend $ [ ] on [ ].

Student answers will vary.
Total saved, donated, and spent should not exceed $75.50.

4 Logan spent $4.25 on a snack and $1.75 on a drink from the vending machine. If she still has $3.25, how much money did Logan have to start with? Show your thinking.

$9.25

Possible explanation:

4.25 + 1.75 + 3.25 = 9.25

Topic 10

Exploring Shapes, Lines, and Angles

Recommended ST Math Objectives:

Lines and Angles
Classifying Shapes
Lines of Symmetry

Name: Date:

Exploring Points, Lines, Rays, and Line Segments

1. Fill in the numerator to make each equation true.

$$\frac{7}{10} = \frac{70}{100} \qquad \frac{6}{10} = \frac{60}{100}$$

2. Use $<$, $>$, or $=$ to compare. $1.2 \; < \; 1.25$

3. Draw a shape that matches these clues:

- It is a closed shape.
- It has 6 sides.
- It has a pointed top.
- It is made up of line segments.

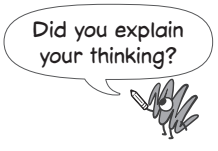
Student drawings will vary.

4. Draw a ray.

Possible answer:

5. A critter drew a closed shape with 4 line segments. Then, the critter added a ray to the drawing. Draw the critter's shape. Explain how your shape matches the critter's shape.

Student drawings and explanations will vary.



Name: Date:

Relating Lines, Rays, and Line Segments

1. Write each fraction as a decimal number.

$\frac{7}{10} =$ **0.7** $\frac{686}{100} =$ **6.86**

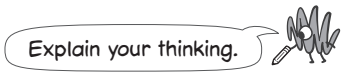
2. a) Complete the pattern. 1, 1, 2, 3, 5, 8, 13, **21**, 34

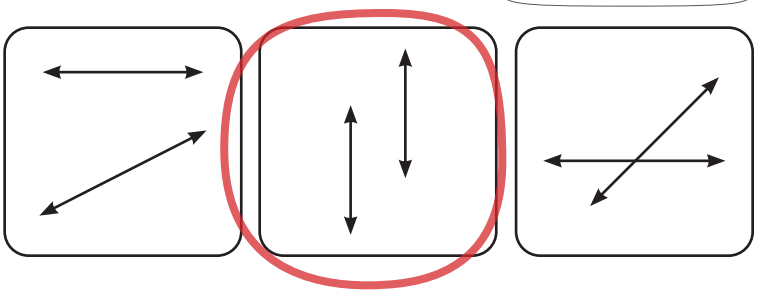
b) What is the rule for this pattern?

Possible explanation:

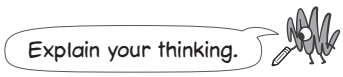
Each number is the sum of the two previous numbers in the pattern.

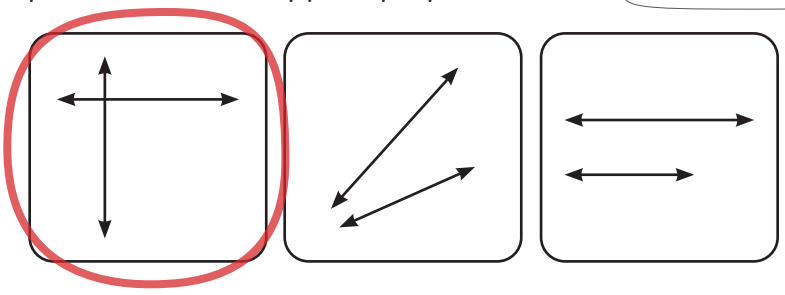
3. Circle the pair of lines that appear parallel.





4. Circle the pair of lines that appear perpendicular.

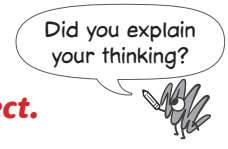




5. A critter wrote 3 uppercase letters. Each letter has at least 1 set of parallel lines. Which uppercase letters could the critter have written? Explain your thinking.

Possible answers:
E, F, H, M, N, Z

Possible explanation:
Each letter has at least one pair of lines that will never intersect.



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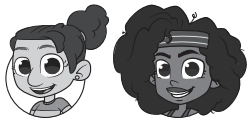


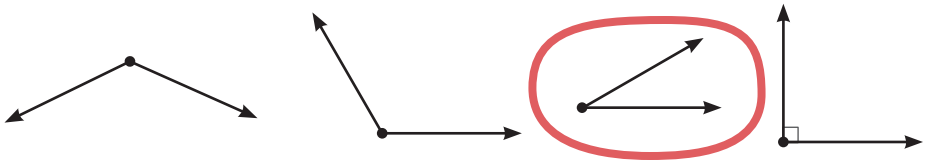
Introducing Angles

1. Hannah sold pies made with blueberries from her family's farm. The cost of preparing the pies was $13.45. The money she received from the sale of the pies was $34.22. What was Hannah's profit?

$20.77

2. Solve. $37 \times 86 =$ ***3,182***

3. Circle the acute angle.



4. Draw an obtuse angle.

Student drawings will vary.

5. Logan looked at the clock to see if it was time for track practice to start. The hands of the clock formed a right angle. What time could the clock have shown? Explain your thinking.

Possible answer:

3:00

Possible explanation:

The hands on the clock form a right angle at 3:00. This time would make sense because track practice could be in the afternoon after school.

Name: _____ Date: _____


Candace

Introducing Degrees

1 Complete each statement.

a) 56 is **8** times as much as 7.

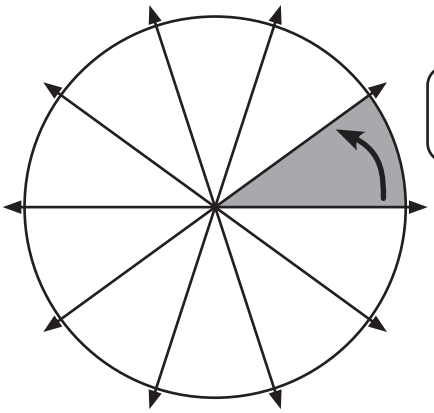
b) 24 is **4** times as much as 6.

2 Solve.

834 ÷ 6 = **139**

1,192 ÷ 8 = **149**

3 How many degrees are in $\frac{1}{10}$ of a turn around a circle?



36 °

4 How many 90° angle turns make up a circle?

4

5 Candace looked up the population of each town her team visited last weekend for soccer games. Town A's population is 42,788 people and Town B's population is 39,794 people. What is the total population of both towns? Show your thinking.

82,582 people

Student answers will vary.

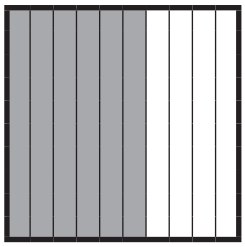
Name: _____ Date: _____

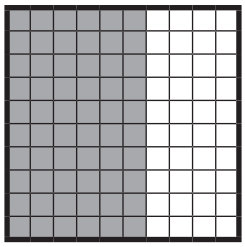

Sarah

Measuring Angles

1 Use < , > , or = to compare.

0.6 **=** 0.60

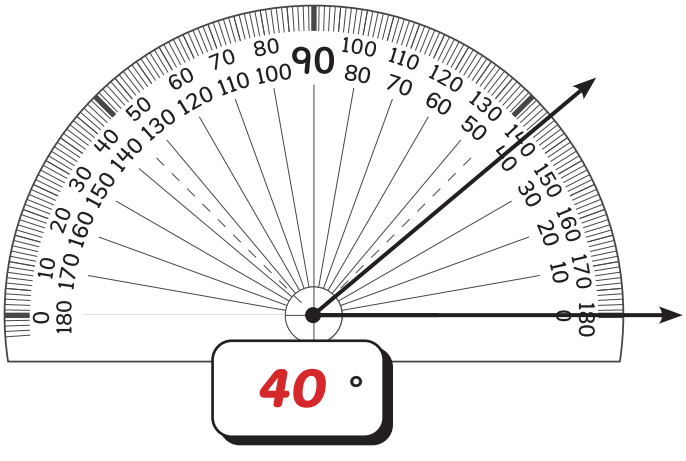

0.6

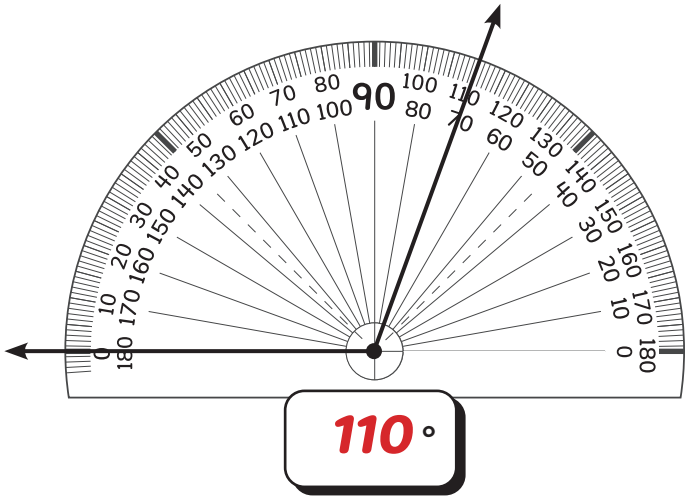

0.60

2 Complete the statement.

0.5 is **one tenth** / **ten times** as great as 0.05.

3 What is the measure of each angle?


40 °


110 °

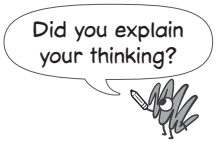
4 Sarah explored the soil in a raised flower bed and counted the creatures she came across. She counted 38 ants, 24 earthworms, 6 snails, and 15 centipedes. Using estimation, do you think Sarah found at least 100 creatures? Explain your thinking.

Possible answer:

No

Possible explanation:

Rounding each number to the nearest 10 to estimate is 40 + 20 + 10 + 20 = 90, which is less than 100.



Name: Date:

Relating Angles and Estimating Angle Measurements

1 Complete the inequality to make it true.

$$\frac{1}{4} < \square$$

The missing number must be 2 or greater.

2 A number is shown in expanded notation.

$$(8 \times 1{,}000) + (4 \times 100) + (2 \times 1) + (3 \times 0.1) + (9 \times 0.01)$$

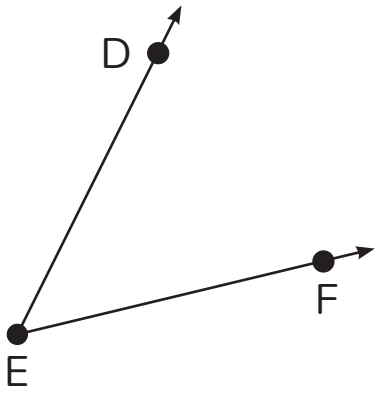
What is the number in standard form?

8,402.39

3 a) Estimate the measure of ∠DEF.

Possible estimate:

40°



b) Use a protractor to find the actual size of ∠DEF.

50°

4 Critter A ate $\frac{5}{12}$ of its bag of peanuts. Critter B ate $\frac{8}{9}$ of its bag of peanuts. Critter C ate $\frac{5}{10}$ of its bag of peanuts. Each bag of peanuts is the same size. Put the amount each critter ate in order from least to greatest. Explain your thinking.

$\frac{5}{12}$, $\frac{5}{10}$, $\frac{8}{9}$

Possible explanation:

$\frac{5}{10}$ is equivalent to $\frac{1}{2}$.

$\frac{5}{12}$ is less than $\frac{1}{2}$, and $\frac{8}{9}$ is greater than $\frac{1}{2}$.

Name: _____ Date: _____


Miles

Solving Problems Involving Angles

1 Complete each statement.

a) 12,758 rounded to the nearest 100 is **12,800**.

b) 12,758 rounded to the nearest 1,000 is **13,000**.

c) 12,758 rounded to the nearest 10,000 is **10,000**.

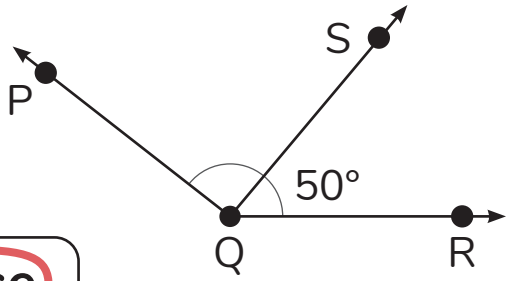
2 Solve. 43,873 – 27,984 = **15,889**

3 Find the measure of ∠PQS without using a protractor.

∠PQR = 142°

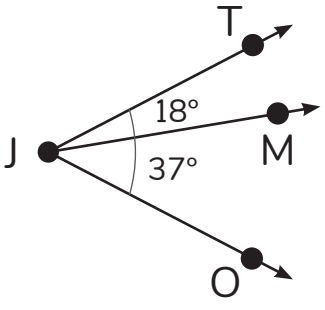
∠PQS = **92°**

∠PQS is **acute** **right** **obtuse**.



4 Without using a protractor, find the measure of ∠TJO.

55°



5 Miles has 12 full storage cases for his toy car collection. If each case holds 25 cars, how many total toy cars are in Miles's collection? Show your thinking.

300 toy cars

Possible explanation:

12 × 25 = 300

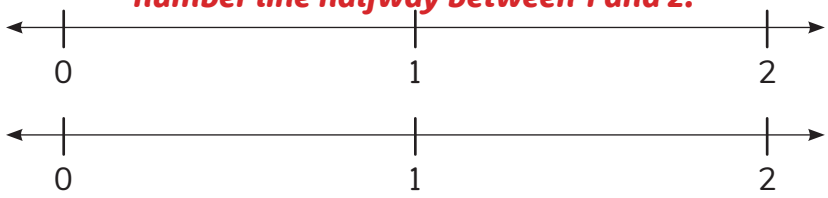
Name: _____ Date: _____


Louis

Sorting, Classifying, and Naming Triangles

1 Use the number lines to find a fraction equivalent to $\frac{6}{4}$.

Student models should show labeled marks on each number line halfway between 1 and 2.



Possible answer:

$1\frac{1}{2}$

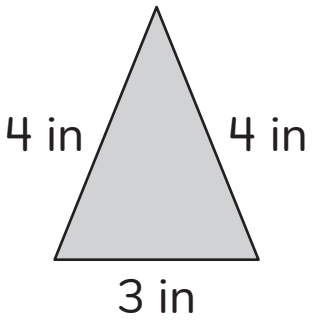
2 Solve. $\frac{2}{10} + \frac{34}{100} =$ ***$\frac{54}{100}$***

3 Circle the words that describe this triangle.

obtuse ***isosceles***

equilateral ***acute***

right **scalene**



4 A triangle can have 2 right angles. **sometimes** **always** ***never***

Possible explanation:

A triangle measures 180 degrees total, and 2 right angles would measure 180 degrees. A triangle always has 3 angles.

5 Louis needs 8 cans of beans for each large batch of chili he makes. If Louis has 94 cans of beans, how many batches of chili can he make? Explain your thinking.

11 batches with 6 cans left over

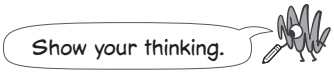
Possible explanation:

94 ÷ 8 = 11 R6

Name: Date:

Sorting, Classifying, and Naming Quadrilaterals

1 The width of the rectangle is 3 cm. The area is 21 square cm.



a) What is the length of the rectangle?

7 cm

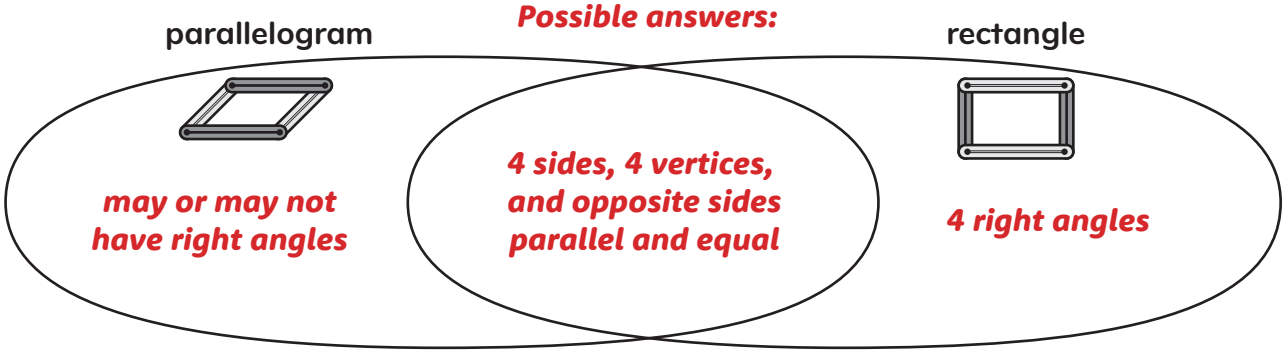
b) What is the perimeter of the rectangle?

20 cm

2 Use < , > , or = to compare. 294,427 **>** 249,427

3 What is the same about a parallelogram and a rectangle? What is different?

Possible answers:



4 A quadrilateral has parallel sides and 2 acute angles.
What shape could it be? Draw a picture and name the shape.

parallelogram or rhombus

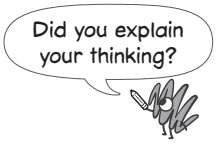
Student drawings will vary.

5 3 critters each made a triangle using AngLegs. Critter A used only 1 color of AngLegs. Critter B used 2 different colors of AngLegs. Critter C used 3 different colors of AngLegs. What type of triangle did each critter make? Explain your thinking.

Critter A made an equilateral triangle, Critter B made an isosceles triangle, and Critter C made a scalene triangle.

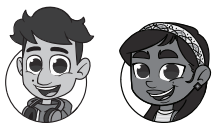
Possible explanation:

A triangle made with one color of AngLegs has three equal-length sides, so Critter A made an equilateral triangle. A triangle made with two colors of AngLegs has two equal-length sides, so Critter B made an isosceles triangle. A triangle made with three colors of AngLegs has three different side lengths, so Critter C made a scalene triangle.



Name: _____ Date: _____

Using Attributes to Compare Quadrilaterals



1 This table shows Mateo's expenses for the bus fees and art supplies.

Which of Mateo's expenses are fixed expenses?

bus fees

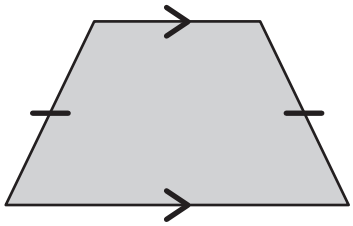
Mateo's Expenses

Month	Bus Fees	Art Supplies
January	$10.00	$8.50
February	$10.00	$5.25
March	$10.00	$12.00
April	$10.00	$7.75

2 A quadrilateral has opposite sides that are parallel, and all of its sides are congruent. All of the angles are congruent and measure 90°. What is the quadrilateral?

a square

3 How would you describe this shape? Use the words *parallel*, *congruent*, and *opposite* in your description.



Possible answer:

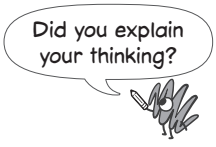
The shape has 1 pair of parallel sides and 2 congruent sides that are on opposite sides of the shape.

4 Dani made a wooden shelf as a birthday present for her brother. She placed 4 kg of books on the shelf for him. What is the mass of the books on the shelf, in grams? Explain your thinking.

4,000 grams

Possible explanation:

1 kg = 1,000 grams, so 4 kg = 4,000 grams.



Name: _____ Date: _____


Sarah

Introducing Lines of Symmetry

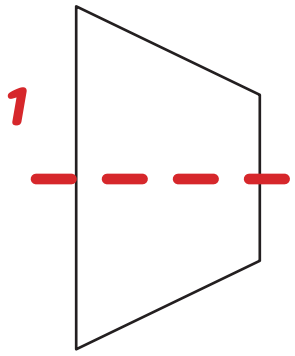
1. Write $55\frac{61}{100}$ as a decimal.

55.61

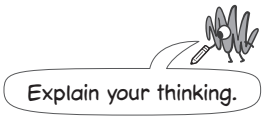
2. Solve.

$327 \times 5 =$ ***1,635***

3. How many lines of symmetry can you find for this trapezoid? Draw each line of symmetry.



4. Does a triangle always have more lines of symmetry than a rectangle?



No

Possible explanation:

An equilateral triangle has 3 lines of symmetry and a rectangle can have only 2. However, a scalene triangle would not have any lines of symmetry.

5. Sarah drew 4 different quadrilaterals. 2 of the quadrilaterals have a line of symmetry. 2 of the quadrilaterals do not have a line of symmetry.

a) Which quadrilaterals could Sarah have drawn? Explain your thinking.

Student shapes will vary.

b) Which of Sarah's shapes have symmetry and which do not? Explain your thinking.

Possible answer:

Sarah could have drawn a square and a rhombus, which have lines of symmetry. She could also have drawn a parallelogram and a scalene trapezoid, which do not have a line of symmetry.

Name: _____ Date: _____


Mateo

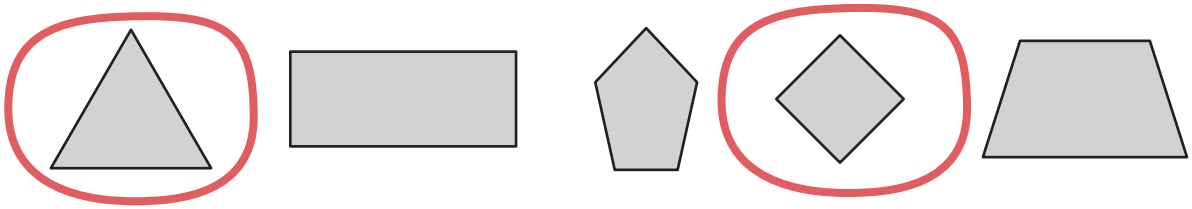
Exploring Lines of Symmetry

1. Create a mixed number that represents 25.7. $25.7 = 25\frac{7}{10}$

2. Complete each measurement conversion.

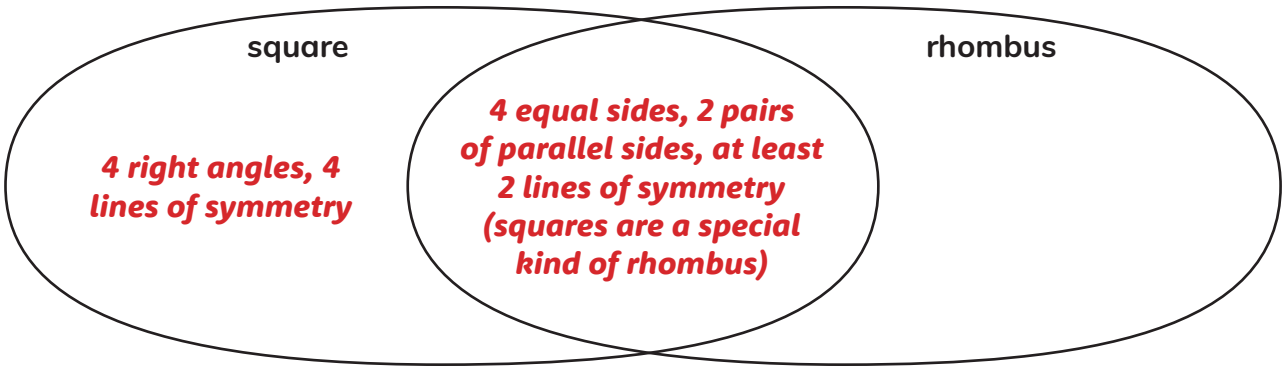
$1 \text{ km} = \boxed{1{,}000} \text{ m}$ $1 \text{ m} = \boxed{100} \text{ cm}$

3. Circle the regular polygons.



4. What is the same about a square and a rhombus? What is different?

Possible answers:



5. Mateo drew a regular polygon with exactly 3 lines of symmetry. What shape did Mateo draw? Explain your thinking.

equilateral triangle

Student explanations will vary.

Topic 11

Making Connections with Time and Data

Recommended ST Math Objectives:

Measurement and Conversions

Dot Plots

Multi-Step Addition and Subtraction Problems

Name: _____ Date: _____


Sarah

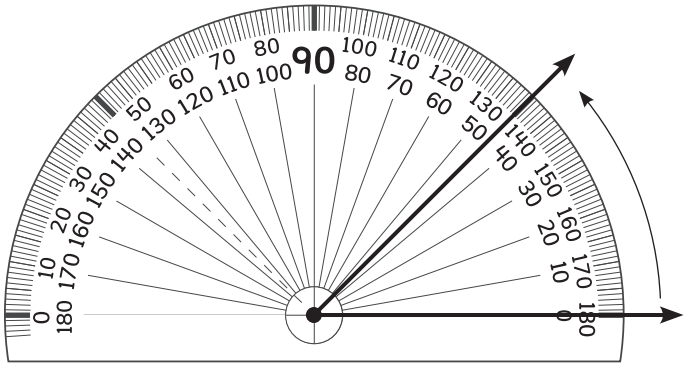
Representing Elapsed Time on a Number Line

1 a) What is the measure of this angle?

45°

b) Is it acute, obtuse, or right?

acute

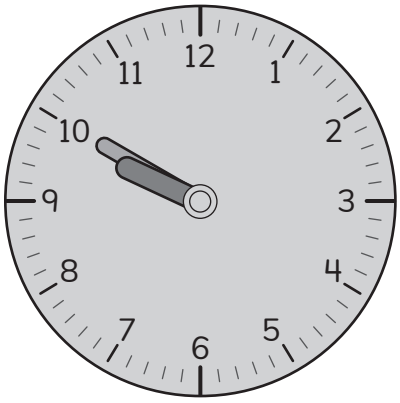


2 Use < , > , or = to compare.

0.82 **>** 0.8

3 What time is shown on the clock?

9:50



4 If a soccer game begins at 12:15 p.m. and lasts for 1 hour and 20 minutes, what time will the soccer game end? Use the timeline to show your thinking.

1:35 p.m.

Student models will vary.

5 Sarah and her dad started working in the community garden at 3:50 p.m. They finished working at 5:05 p.m. How long did Sarah and her dad work in the garden? Explain your thinking.

1 hour and 15 minutes

Possible explanation:

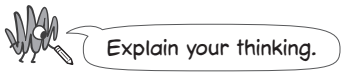
They started at 3:50. One hour later is 4:50, and 5:05 is 15 minutes after that.

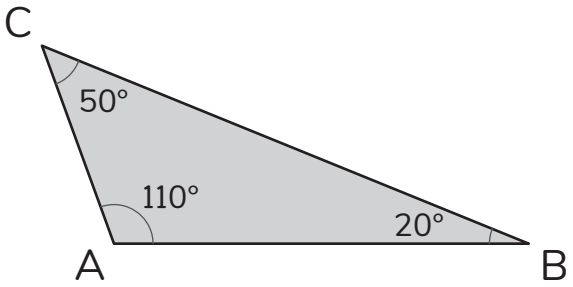
Name: _____ Date: _____


Naomi

Solving Elapsed Time Word Problems

1 Is this triangle acute, obtuse, or right?



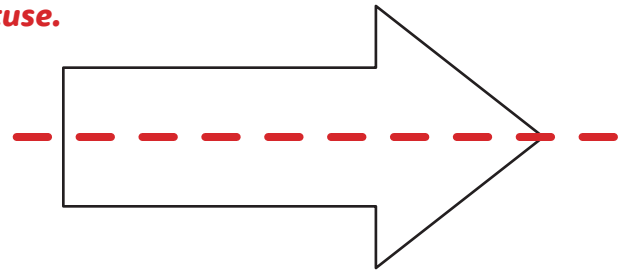


obtuse

Possible explanation:

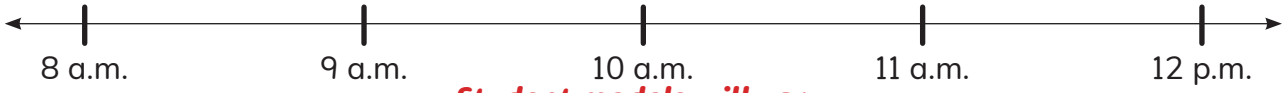
The triangle has an angle that is greater than 90 degrees, so it is obtuse.

2 Draw all the lines of symmetry for this shape.



3 Naomi's family walked on the beach for 75 minutes. They started their walk at 8:30 a.m. At what time did they finish their walk? Use the timeline to show your thinking.

9:45 a.m.



Student models will vary.

4 Naomi's family left the beach at 3:15 p.m. They stopped for dinner and got home at 7:00 p.m. How much time passed between leaving the beach and arriving home? Use the timeline to show your thinking.

3 hours and 45 minutes

Student models will vary.

5 What time is shown on the clock? What time will it be in 0.25 hours? Explain your thinking.

8:25, 8:40

Possible explanation:

0.25 hours is 15 minutes.
15 minutes after 8:25 is 8:40.

Name: _____ Date: _____

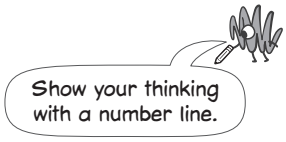

Aleki

Using Open Timelines to Solve Problems

1. Solve. $\frac{3}{10} + \frac{28}{100} =$ **$\frac{58}{100} = \frac{29}{50}$** $\frac{5}{10} + \frac{49}{100} =$ **$\frac{99}{100}$**

2. Write 0.83 as a fraction. **$\frac{83}{100}$**

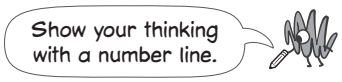
3. Aleki and his uncle spent 53 minutes driving to a carnival.
They spent 15 minutes standing in line to enter the carnival.
If they left home at 9:00 a.m., what time did they enter the carnival?



10:08 a.m.

Student models will vary.

4. Aleki and his uncle got in line for a ride at 10:45 a.m.
They got off the ride at 11:17 a.m. Which ride did they go on?

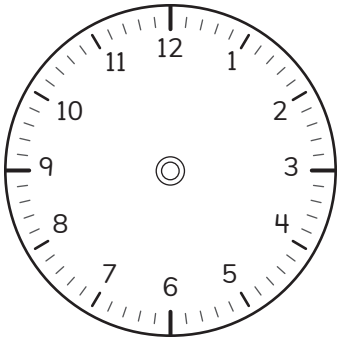


Wait and Ride Times	
Roller Coaster: 48 minutes	**Carousel:** 25 minutes
Alien Swings: 30 minutes	**Ferris Wheel:** 50 minutes
Pirate Ship: 32 minutes	

Pirate Ship

Student models will vary.

5. What time is shown on the first clock?
Draw the hands on the second clock to represent a time $2\frac{3}{4}$ hours later.



3:40

The clock will show 6:25.

Name: _____ Date: _____


Logan

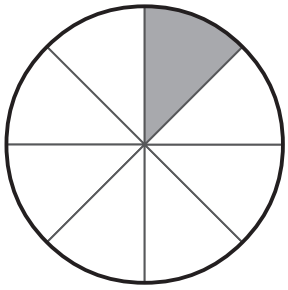
Exploring Angles and Fractions on Clocks

1 Solve.

$\frac{8}{8} + \frac{7}{8} =$ **$\frac{15}{8}$**

$6\frac{1}{3} - 1\frac{2}{3} =$ **$4\frac{2}{3}$**

2 How many degrees are $\frac{1}{8}$ of a circle?



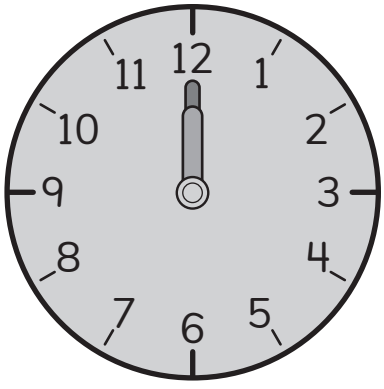
45°

3 a) What time is it when the hour hand has rotated $\frac{1}{3}$ around the clock from 12:00?

4:00

b) What time is it when the minute hand is 180 degrees past 12:00?

12:30



c) What time is it when the minute hand is 90 degrees past 12:00?

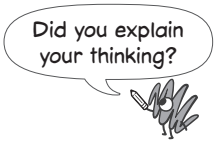
12:15

4 Logan started a run at 4:52 p.m. She finished at 5:43 p.m. How many minutes did Logan run? Explain your thinking.

51 minutes

Possible explanation:

She ran 8 minutes before 5:00 and 43 minutes after.
8 + 43 = 51

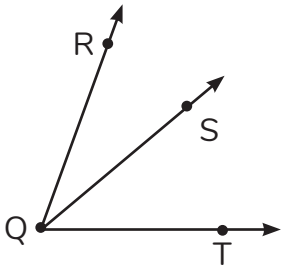


Name: _____ Date: _____


Louis

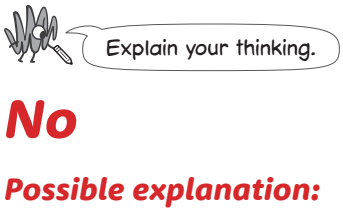
Telling Time Using Angles and Fractions

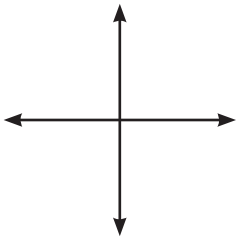
1 ∠RQT has a measure of 70°.
∠RQS has a measure of 30°.
What is the measure of ∠SQT?



40°

2 Are these lines parallel?


Explain your thinking.



No

Possible explanation:

The lines are not parallel because they intersect. Parallel lines do not cross each other.

3 Complete each measurement conversion.

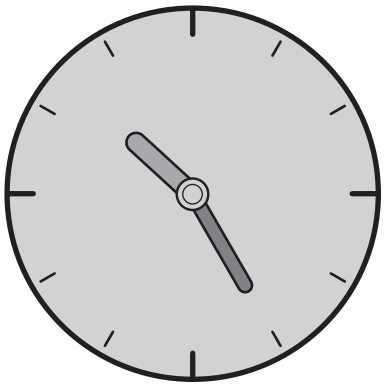
$\frac{1}{4}$ hour = ***15*** minutes

$\frac{2}{3}$ hour = ***40*** minutes

$\frac{3}{4}$ hour = ***45*** minutes

4 What time is shown on the clock?


Explain your thinking.



10:25

Student explanations will vary.

5 Louis went to the basketball court to practice 3 days this week. He went for $\frac{2}{3}$ of an hour the first day, $\frac{3}{4}$ of an hour the second day, and $\frac{2}{3}$ of an hour the third day.
How many total minutes did Louis practice this week? Explain your thinking.

125 minutes, or 2 hours and 5 minutes

Possible explanation:

He went for $\frac{2}{3}$ hour on two days. $\frac{2}{3}$ hour is 40 minutes.

He went for $\frac{3}{4}$ hour one day. $\frac{3}{4}$ hour is 45 minutes.

40 + 40 + 45 = 125 minutes = 2 hours and 5 minutes

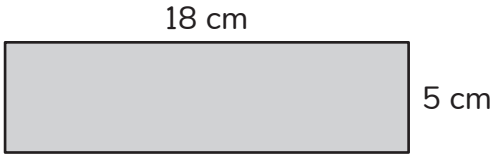

Did you explain your thinking?

Name: _____ Date: _____


Dani

Converting Between Units of Time

1 a) What is the area of the rectangle?



Area = 90 square cm

b) What is the perimeter of the rectangle?

Perimeter = 46 cm

2 What is 3 times as much as 32 × 4? **384**

3 Dani spent 3 times as long as her brother creating a blueprint for a new bookshelf. If Dani spent 45 minutes on the blueprint, how long did her brother spend on the blueprint?

15 minutes

4 Dani spent 75 minutes painting the bookshelf. Her brother spent 3 times as long as Dani to finish painting the bookshelf. How long did it take Dani's brother to finish painting the bookshelf?

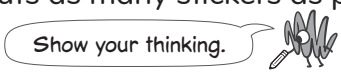
225 minutes or 3 hours and 45 minutes

Name: _____ Date: _____

Exploring Patterns with Multiples Involving Time

1. Solve. $4{,}872 + 6{,}150 =$ **11,022**

2. Naomi is decorating notebooks for a party. She has 3 blue notebooks, 2 purple notebooks, and 3 green notebooks. She has 126 stickers. Naomi puts the same number of stickers on each notebook. If she puts as many stickers as possible on each notebook, how many stickers will she have left?

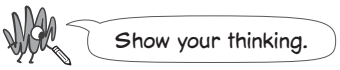


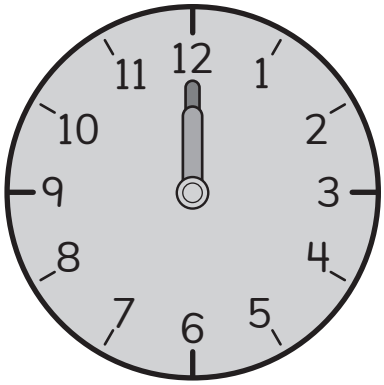
6 stickers

Possible explanation:

Naomi has 3 + 2 + 3 = 8 total notebooks. 126 ÷ 8 = 15 R6, so she can put 15 stickers on each notebook and have 6 left over.

3. If a bell rings at 12:00 p.m. and then rings every 25 minutes, when is the next time that it will ring on the hour?





5:00

Possible explanation:

12:00, 12:25, 12:50, 1:15, 1:40, 2:05, 2:30, 2:55, 3:20, 3:45, 4:10, 4:35, 5:00

4. The cafeteria is open between 10:45 a.m. and 1:00 p.m. If each grade level gets 25 minutes for lunch, how many grade levels can the cafeteria serve?

5 grade levels

Possible explanation:

The classes can arrive at 10:45, 11:10, 11:35, 12:00, and 12:25.

5. Louis was tracking game attendance for his favorite basketball team. Attendance at Tuesday night's game was 16,302 people. Attendance at Friday night's game was 289 fewer people than at Tuesday's game. What was the attendance at Friday night's game? Show your thinking.

16,013 people

Possible explanation:

16,302 – 289 = 16,013

Name: _____ Date: _____


Logan

Solving Problems with Time-Based Data

1 Use < , > , or = to compare.

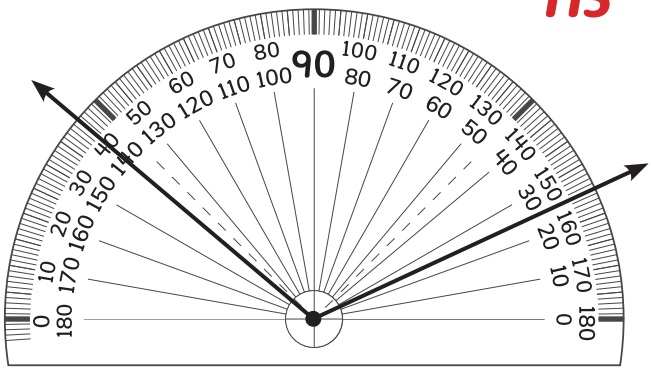
3.40 **=** 3.4

0.8 **>** 0.08

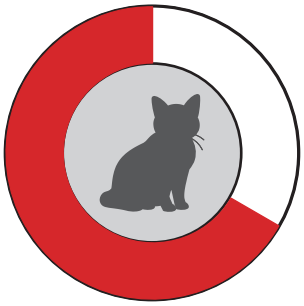
1.2 **<** 2.1

2 What is the measurement of the angle?

115°



3



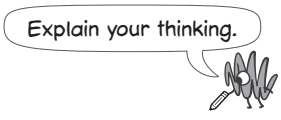
A cat sleeps about 16 hours a day.

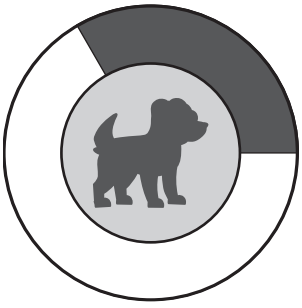
a) Shade the circle to show about how long a cat sleeps.
$\frac{2}{3}$ of the circle should be shaded

b) What fraction of the day do cats sleep?

$\frac{16}{24}$ or $\frac{2}{3}$

4 Dogs sleep about 8 hours each day, as shown in this model. Using the data from Problem 3, how does the amount of time a dog sleeps each day compare to the amount of time a cat sleeps each day? Circle the statement you agree with.





- **Dogs sleep 2 times as many hours as cats.**
- **Cats sleep 2 times as many hours as dogs.**
- **Dogs and cats sleep the same amount of time.**

Possible explanation:

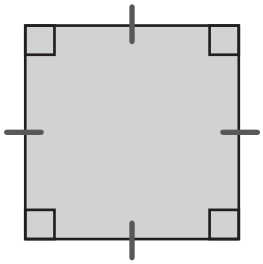
16 is 2 times as great as 8.

Name: _____ Date: _____

Solving Problems with Time Estimates

1. Circle all of the names for this quadrilateral.

square rectangle rhombus trapezoid



2. What is the value of the underlined digit in 1,000,000,000?

1,000,000,000

3. During a road trip, Candace's family stops for a break. They spend 2 hours and 14 minutes at a state park. How many minutes do they spend at the park? Show your thinking.

134 minutes

Possible explanation:

2 hours = 2 × 60 minutes = 120 minutes, 120 + 14 = 134

4. Candace's family was away from home for 1 week, 3 days, and 15 hours. How many hours was Candace's family away from home? Show your thinking.

255 hours

Possible explanation:

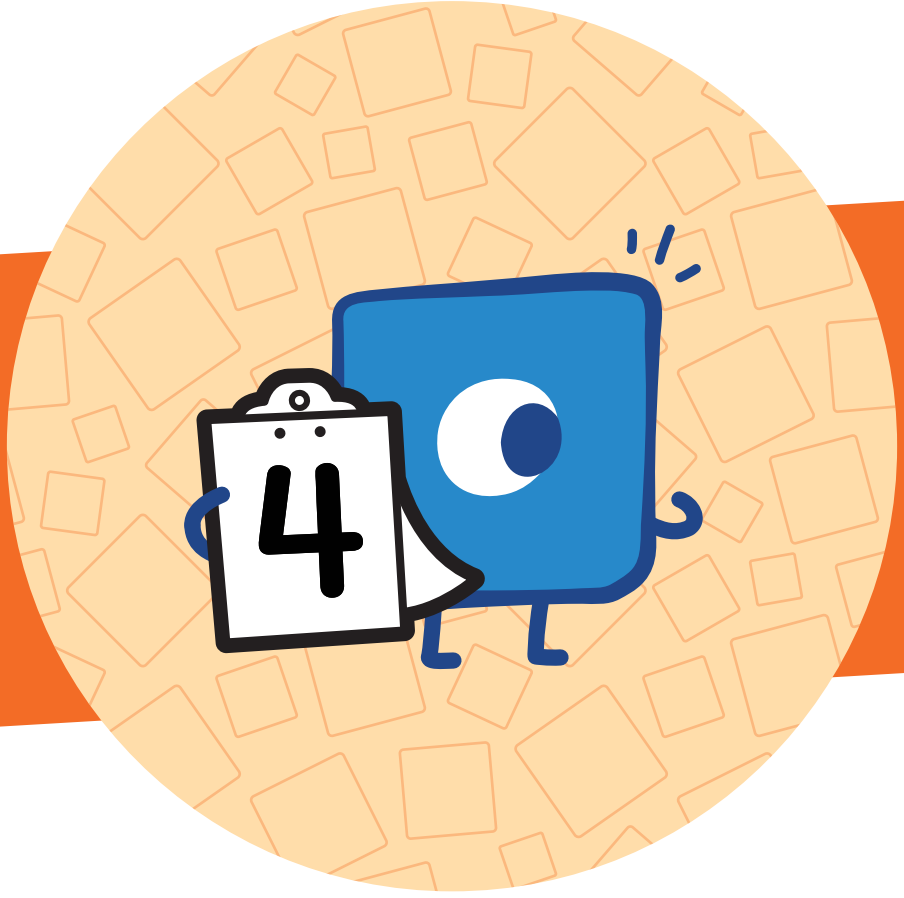
They were away for 10 days + 15 hours. 10 × 24 + 15 = 255

5. If Louis used 2.5 kilograms of flour to make muffins, how many total grams of flour did Louis use? Show your thinking.

2.5 × 1,000 = 2,500 grams

Did you show your thinking?

ST Math
Texas



MIND EDUCATION