

Operations and Algebraic Thinking

- 1 Use words to write this equation as a comparison sentence.

$$72 = 8 \times 9$$

Possible answer: 72 is 8 times as many as 9 or 72 is 9 times as many as 8.

- 2 Katie wrote a 9-page history essay. She wrote 3 times as many pages as Megan. Write a multiplication equation that compares the numbers of pages Katie and Megan wrote.

Possible equation: $9 = 3 \times 3$

Write an equation to solve the problem. Then solve.

- 3 There are 24 orders for fruit baskets at a gift store. This is 4 times as many orders as there are for bagel baskets. How many orders are there for bagel baskets, b ?

Possible equation: $24 = 4 \times b$;

$b = 6$ orders

- 4 Darren parked 126 cars in parking lot A. This is 9 times as many cars as he parked in lot B. How many cars, c , did Darren park in lot B?

Possible equation: $126 \div 9 = c$;

$c = 14$ cars

Solve.

- 5 A group of students attend a science competition over the weekend. There are 12 students each from grades 4 and 5, and 15 students each from grades 6 and 7. The hotel books 4 students to each room. How many rooms do the students need? Explain.

14 rooms; Possible explanation: Because $(2 \times 12 + 2 \times 15) \div 4 = 13$ R2, they need an extra room for 2 students.

- 6 Karina has \$100 to buy items for a beach trip. She buys 3 pairs of flip flops for \$11 each and a swimsuit for \$65. How much money does she have left? Write an equation and use it to solve the problem. Use a letter for the unknown quantity.

\$2; Possible equation:

$100 - (3 \times 11 + 65) = m$; $m = 2$

- 7 Mrs. Brady's class paid for 8 adult tickets and 23 student tickets to the zoo. Adult tickets cost \$12 and student tickets cost \$7. They also paid a total of \$22 for a guided tour.

Branson says the total cost for the tickets and tour is \$279. Use rounding to show whether Branson's answer is reasonable.

Possible answer: Using rounding, the cost is

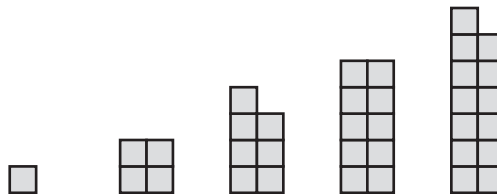
$$(8 \times 10) + (20 \times 7) + 20 = 80 + 140 + 20 = 240.$$

\$240 is close to \$279, so Branson's answer is reasonable.

- 8 Use the rule to write the next 9 terms in the pattern.

Multiply by 2	7	14	28	56	112	224	448	896	1,792	3,584
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- 9 Describe the figure in the seventh term of the pattern.



Possible answer: There will be 10 squares in the first column and 9 squares in the second column, for a total of 19 squares.

- 10 Tomas made this pattern using the rule *add 50*. Describe how the terms in the pattern will continue to change from one number to the next.

15, 65, 115, 165, 215, 265, 315, 365, 415, 465

Possible answer: The last two digits in each term will alternate between 15 and 65, and the first digit will increase by 1 every two terms.

Number and Operations in Base Ten

- 11 Write a number in which the value of the digit in the hundreds place is 10 times the value of the digit in the tens place.

Possible answer: 665

- 12 Look at this number.

7,993

How many times as great is the value of the digit in the hundreds place as the value of the digit in the tens place?

10 times as great

- 13 A movie theater complex sold 13,268 tickets last week. What is this number in expanded form?

$10,000 + 3,000 + 200 + 60 + 8$

- 14 A travel agency booked 9,206 trips last month. It booked 9,290 trips this month. Compare the number of trips booked for each month. Use $>$, $<$, or $=$.

9,206 $<$ 9,290

- 15 Mt. Hood, in Oregon, has a height of 11,239 feet. What is this height rounded to the nearest thousand feet?

11,000 feet

- 16 In 2010, the population of Salt Lake City, Utah, was 186,440. What is the population rounded to the nearest ten thousand?

190,000

Solve.

Show your work.

- 17 A company sold 1,864 bars of handmade soap last month. Each bar sold for \$8. How much did the company earn last month selling handmade soap?

\$14,912

- 18 The floor space in a gym is 84 feet wide by 76 feet long. What is the area of the floor space? Complete the equation to solve the problem.

$$84 \times 76 = (80 \times 70) + (80 \times 6) + (4 \times 70) + (4 \times 6) = \square$$

6,384 square feet; $5,600 + 480 + 280 + 24 = 6,384$

- 19 Three friends paid a total of \$2,535 for summer camp. Each person paid the same amount. How much did each person pay?

\$845

- 20 Sofia has 104 yards of fabric. She needs 9 yards to make each pirate costume. How many costumes can she make? Explain by using an equation to support your answer.

11 costumes; $104 \div 9 = 11 \text{ R}5$; The remaining 5 yards

is not enough to make another costume.

Number and Operations—Fractions

- 21 Zada and Mia have the same crossword puzzle book with 12 puzzles. Zada finished $\frac{3}{4}$ of the puzzles and Mia finished $\frac{9}{12}$ of the puzzles. Zada thinks $\frac{3}{4}$ of the puzzles is the same as $\frac{9}{12}$ of the puzzles. Explain why Zada is correct.

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
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$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$
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Possible explanation: Each 1 fourth is the same as

3 twelfths, so 3 fourths is the same as 9 twelfths.

- 22 Henry multiplies the numerator and the denominator of a fraction by the same number to find an equivalent fraction. Use the same method to find three fractions that are equivalent to $\frac{1}{6}$.

Possible answer: $\frac{2}{12}$, $\frac{3}{18}$, $\frac{4}{24}$

- 23 What is the sum? Explain how you found the sum.

$$\frac{2}{6} + \frac{3}{6} = \blacksquare$$

$\frac{5}{6}$; Possible explanation: The denominators are the same,

so I added the numerators; $\frac{2}{6} + \frac{3}{6} = \frac{(2 + 3)}{6} = \frac{5}{6}$

- 24 Complete the equation to show how to subtract the fractions.

$$\frac{7}{10} - \frac{4}{10} = \frac{\blacksquare - \blacksquare}{\blacksquare} = \frac{\blacksquare}{\blacksquare}$$

$$\frac{(7 - 4)}{10} = \frac{3}{10}$$

- 25 Complete the equation.

$$\frac{8}{12} = \frac{4}{12} + \frac{3}{12} + \underline{\frac{1}{12}}$$

- 26 Nicole uses the model to write $\frac{4}{5}$ as the sum of its parts.



$$\frac{4}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

Use the model to show another way to write $\frac{4}{5}$.

Possible answer: $\frac{4}{5} = \frac{1}{5} + \frac{3}{5}$

- 27 Brody puts $1\frac{1}{4}$ cups of bird seed in the feeder every morning. He adds $2\frac{3}{4}$ cups every afternoon. How much bird seed does he put in the feeder each day?

4 cups

- 28 Penn's dog gained $4\frac{3}{8}$ pounds and his cat gained $2\frac{5}{8}$ pounds. How much more weight did Penn's dog gain than his cat?

$1\frac{6}{8}$ or $1\frac{3}{4}$ pounds

- 29 Dee takes a shopping bag to a farm stand. She fills $\frac{2}{5}$ of the bag with vegetables and $\frac{1}{5}$ with fruit. What fraction of the bag is full?

$\frac{3}{5}$ of the bag

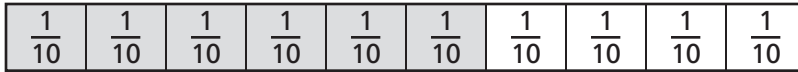
- 30 Cooper runs $\frac{3}{8}$ mile to the park. Then he runs to the store. Cooper runs $\frac{7}{8}$ mile in all. What is the distance from the park to the store? Write an equation and use it to solve the problem.

Possible equation: $\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$ or $\frac{1}{2}$ mile

- 31 Write the fraction as the product of a whole number and a unit fraction.

$$\frac{9}{12} = \underline{9 \times \frac{1}{12}}$$

- 32 Use the model to write $\frac{6}{10}$ as the product of a whole number and a unit fraction.

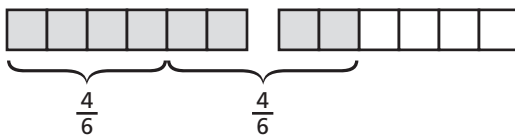


$$\frac{6}{10} = \underline{6 \times \frac{1}{10}}$$

- 33 Madeline is making 4 batches of salt dough. She uses $\frac{2}{3}$ cup of salt for each batch. Complete the equation to find how many cups of salt she uses. Write the number of cups as a mixed number.

$$4 \times \frac{2}{3} = \underline{\frac{2}{3}} + \underline{\frac{2}{3}} + \underline{\frac{2}{3}} + \underline{\frac{2}{3}} = \underline{2\frac{2}{3} \text{ cups}}$$

- 34 Jon is multiplying $2 \times \frac{4}{6}$. Use the model to find the product.



$$2 \times \frac{4}{6} = \underline{\frac{8}{6} \text{ or } 1\frac{2}{6}}$$

- 35 Gianna needs 4 pieces of wood to make a picture frame. Each piece of wood needs to be $\frac{5}{6}$ foot long. How much wood does she need in all? Write the answer as a mixed number.

$3\frac{2}{6}$ or $3\frac{1}{3}$ feet

- 36 Adam buys 12 bags of pumpkin seeds. Each bag weighs $\frac{3}{8}$ pound. Write and solve an equation to find the total weight of the pumpkin seeds.

Possible equation: $12 \times \frac{3}{8} = \frac{36}{8}$ or $4\frac{4}{8}$ pounds

- 37 In Jordan's collection of antique bottles, $\frac{3}{10}$ of the bottles are purple. Write an equivalent fraction with a denominator of 100.

$\frac{30}{100}$

- 38 In a survey on sunscreen, $\frac{8}{100}$ of the people said they never use sunscreen and $\frac{1}{10}$ said they sometimes use it. What fraction of the surveyed people said they sometimes or never use sunscreen?

$$\frac{8}{100} + \frac{1}{10} = \frac{18}{100}$$

- 39 There are 10 children playing in a sandbox, and 4 of them have buckets. Write the fraction of children with buckets as a decimal.

0.4

- 40 Tammy lives 0.73 mile from the bicycle shop. She lives 0.7 mile from the park. Compare the distances using $>$, $<$, or $=$.

$$0.73 > 0.7$$

Measurement and Data

- 41 The window in Rika's sunroom is 2 meters high. How high is the window in centimeters?

200 centimeters

- 42 Vince buys a turkey that weighs 15 pounds. How much does the turkey weigh in ounces?

240 ounces

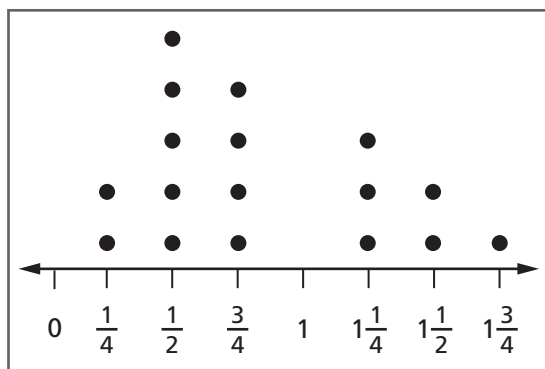
- 43 Faith started researching asteroids at 2:20 p.m. She finished researching at 4:05 p.m. How many minutes did she spend on research?

105 minutes

- 44 Evan made 3 jugs of lemonade. Each jug holds 2 liters of lemonade. How many milliliters of lemonade did Evan make?

6,000 milliliters

- 45 Leila makes and ships ceramic birds. The line plot shows the weights of some ceramic birds.



**Ceramic Bird Weights
(pounds)**

On Monday, Leila shipped all of the birds that weigh $\frac{1}{2}$ pound and $1\frac{1}{2}$ pounds. What was the total weight of the ceramic birds that she shipped?

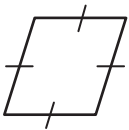
$5\frac{1}{2}$ pounds

Geometry

Write all the names from the box that describe the polygon.

quadrilateral	parallelogram	square
rectangle	rhombus	trapezoid

46



quadrilateral, parallelogram, rhombus

47



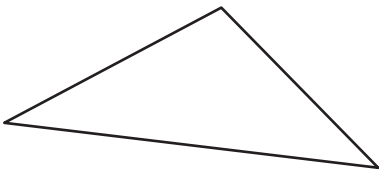
quadrilateral, trapezoid

- 48 Ernesto drew a quadrilateral with four right angles. What figure could he have drawn? Explain.

Possible answer: He could have drawn a rectangle or square
because both of these quadrilaterals have four right angles.

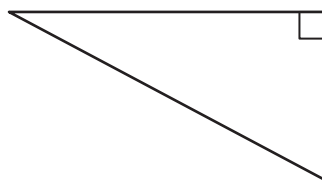
Classify the triangle by its angles.

49



obtuse triangle

50



right triangle
