Rising 4th Summer Math Packet

Name:

- Complete all pages
- Show your work
- Turn in on the first day of school
- A completion grade will be given

Mrs. Weeks

Algebra • Find Unknown Numbers

Lily has 20 stuffed animals. She wants to put the same number of stuffed animals on each of 5 shelves. How many stuffed animals will Lily put on each shelf?

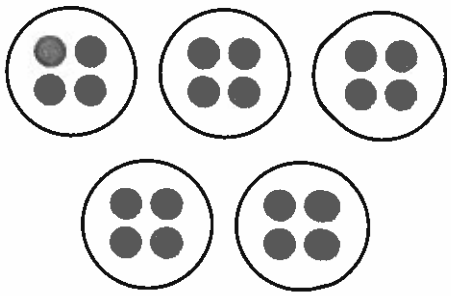
Find the unknown number. $5 \times c = 20$

You can use counters to find the unknown number.

Step 1 Use 20 counters.

Step 2 Make 5 equal groups. Place 1 counter in each of the groups until you have placed all 20 counters.

Step 3 Count the number of counters in each group.
4 counters



$c = 4$

$5 \times 4 = 20$

So, Lily will put 4 stuffed animals on each of the 5 shelves.

Find the unknown number.

1. $3 \times b = 24$

$b =$ _____

2. $n \times 7 = 21$

$n =$ _____

3. $36 = 4 \times z$

$z =$ _____

4. $7 \times 8 = s$

$s =$ _____

5. $r \times 5 = 45$

$r =$ _____

6. ■ $\times 4 = 40$

■ = _____

7. $p = 3 \times 4$

$p =$ _____

8. $m \times 6 = 42$

$m =$ _____

9. $6 \times h = 36$

$h =$ _____

10. $63 = 7 \times d$

$d =$ _____

11. $3 \times y = 6$

$y =$ _____

12. $32 = 4 \times$ ▲

▲ = _____

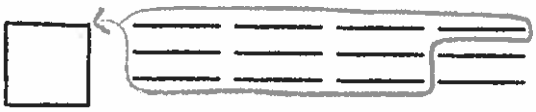
© Houghton Mifflin Harcourt Publishing Company

Name _____

Multiply Multiples of 10 by 1-Digit Numbers

You can use place value and regrouping to multiply multiples of 10.

Find 3 × 40.

Step 1 Use quick pictures to draw 3 groups of 40. 	**THINK** Multiply the ones. 3 × 0 ones = 0 ones.	**RECORD** 40 × 3 0
Step 2 Regroup the 12 tens. 	Multiply the tens. 3 × 4 tens = 12 tens Regroup the 12 tens as 1 hundred 2 tens	40 × 3 120

So, 3 × 40 = 120.

Find the product. Draw a quick picture.

1. 4 × 50 = _____

2. 7 × 30 = _____

3. _____ = 9 × 20

4. 6 × 70 = _____

© Houghton Mifflin Harcourt Publishing Company

Name _____

Model with Arrays

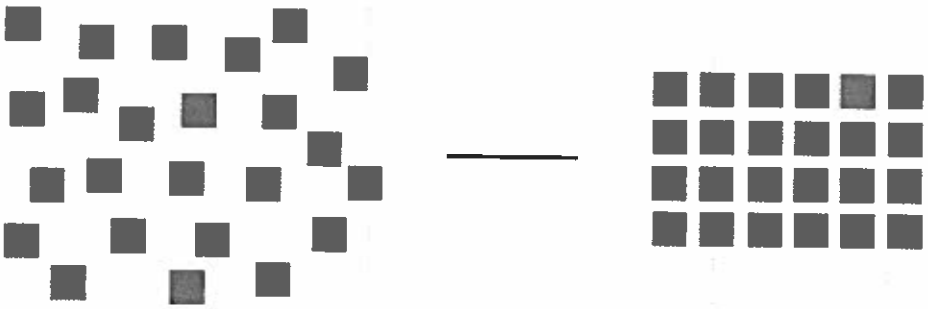
You can use arrays to model division.

How many rows of 6 tiles each can you make with 24 tiles?

Use square tiles to make an array. Solve.

Step 1 Use 24 tiles.

Step 2 Make as many rows of 6 as you can.



You can make 4 rows of 6.

So, there are 4 rows of 6 tiles in 24.

Use square tiles to make an array. Solve.

1. How many rows of 7 are in 28?

_____

2. How many rows of 5 are in 15?

_____

Make an array. Then write a division equation.

3. 18 tiles in 3 rows

_____

4. 20 tiles in 4 rows

_____

5. 14 tiles in 2 rows

_____

6. 36 tiles in 4 rows

_____

© Houghton Mifflin Harcourt Publishing Company

Name _____

Multiplication and Division Match

Solve. Then draw a line to match each multiplication equation to a related division equation.

1.	$2 \times 8 =$ _____ •	**A**	$12 \div 2 = 6$
2.	$5 \times 8 =$ _____ •	**B**	$42 \div 7 = 6$
3.	$3 \times 9 =$ _____ •	**C**	$18 \div 3 = 6$
4.	$6 \times 7 =$ _____ •	**D**	$40 \div 8 = 5$
5.	$2 \times 6 =$ _____ •	**E**	$24 \div 6 = 4$
6.	$5 \times 7 =$ _____ •	**F**	$27 \div 9 = 3$
7.	$6 \times 4 =$ _____ •	**G**	$24 \div 3 = 8$
8.	$8 \times 8 =$ _____ •	**H**	$36 \div 9 = 4$
9.	$3 \times 6 =$ _____ •	**I**	$16 \div 2 = 8$
10.	$9 \times 4 =$ _____ •	**J**	$18 \div 2 = 9$
11.	$9 \times 2 =$ _____ •	**K**	$64 \div 8 = 8$
12.	$8 \times 3 =$ _____ •	**L**	$35 \div 5 = 7$

© Houghton Mifflin Harcourt Publishing Company

Divide by 6

You can use a multiplication table to divide by 6.

Find the quotient. $42 \div 6$

Think of a related multiplication fact.
$6 \times \blacksquare = 42$

Find the row for the factor, 6.

Look right to find the product, 42.

Look up to find the unknown factor, 7.

7 is the factor you multiply by 6 to get the product, 42.

So, $6 \times 7 = 42$.

Use this related multiplication fact to find the quotient.

Since $6 \times 7 = 42$, then $42 \div 6 = 7$.

So, $42 \div 6 = 7$.

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Find the unknown factor and quotient.

1. $6 \times \_\_\_\_ = 30$ $30 \div 6 = \_\_\_\_$ **2.** $6 \times \_\_\_\_ = 48$ $48 \div 6 = \_\_\_\_$

3. $6 \times \_\_\_\_ = 18$ $18 \div 6 = \_\_\_\_$ **4.** $6 \times \_\_\_\_ = 24$ $24 \div 6 = \_\_\_\_$

Find the quotient.

5. $6 \div 6 = \_\_\_\_$ **6.** $42 \div 6 = \_\_\_\_$ **7.** $54 \div 6 = \_\_\_\_$ **8.** $12 \div 6 = \_\_\_\_$

9. $0 \div 6 = \_\_\_\_$ **10.** $36 \div 6 = \_\_\_\_$ **11.** $6 \div 1 = \_\_\_\_$ **12.** $60 \div 6 = \_\_\_\_$

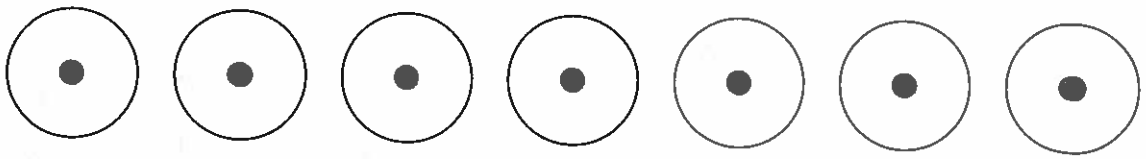
© Houghton Mifflin Harcourt Publishing Company

Divide by 7

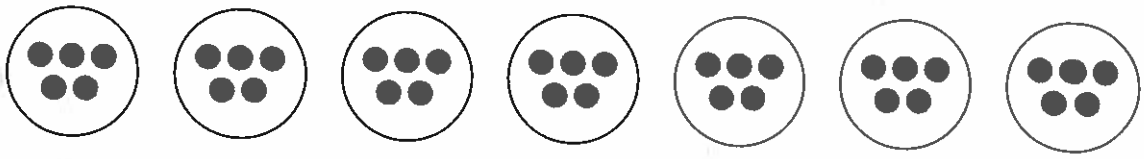
You can use counters to divide by 7.

Find the quotient. 35 ÷ 7

Step 1 Draw 7 circles to show 7 groups. Place 1 counter in each group.



Step 2 Continue placing 1 counter at a time in each group until all 35 counters are placed.



There are 5 counters in each group.

So, 35 ÷ 7 = 5.

Find the unknown factor and quotient.

1. 7 × ____ = 63 63 ÷ 7 = ____ | **2.** 7 × ____ = 7 7 ÷ 7 = ____

3. 7 × ____ = 14 14 ÷ 7 = ____ | **4.** 7 × ____ = 28 28 ÷ 7 = ____

Find the quotient.

5. ____ = 56 ÷ 7 **6.** 21 ÷ 7 = ____ **7.** 42 ÷ 7 = ____ **8.** 28 ÷ 7 = ____

9. ____ = 35 ÷ 7 **10.** 63 ÷ 7 = ____ **11.** 49 ÷ 7 = ____ **12.** 70 ÷ 7 = ____

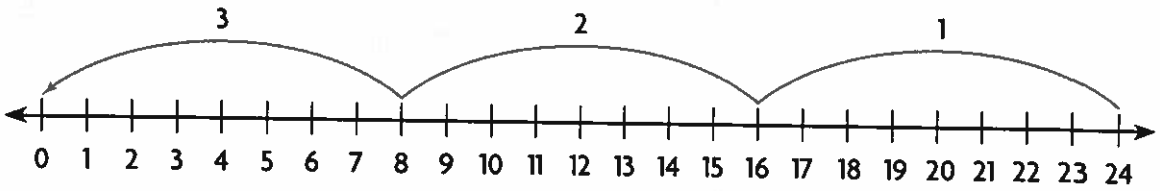
© Houghton Mifflin Harcourt Publishing Company

Divide by 8

You can use a number line to divide by 8.

Find the quotient. $24 \div 8$

Step 1 Start at 24. Count back by 8s as many times as you can until you reach 0. Draw the jumps on the number line.



Step 2 Count the number of times you jumped back 8.

You jumped back by 8 **three** times.

So, $24 \div 8 = 3$.

Find the unknown factor and quotient.

1. ____ $\times 8 = 72$ $72 \div 8 =$ ____ | **2.** $8 \times$ ____ $= 48$ $48 \div 8 =$ ____

3. $8 \times$ ____ $= 40$ $40 \div 8 =$ ____ | **4.** ____ $\times 8 = 16$ $16 \div 8 =$ ____

Find the quotient.

5. $32 \div 8 =$ ____ **6.** ____ $= 8 \div 8$ **7.** $64 \div 8 =$ ____

8. $56 \div 8 =$ ____ **9.** ____ $= 0 \div 8$ **10.** $80 \div 8 =$ ____

11. $24 \div 8 =$ ____ **12.** ____ $= 72 \div 8$ **13.** ____ $= 48 \div 8$

© Houghton Mifflin Harcourt Publishing Company

Divide by 9

You can use repeated subtraction to divide by 9.

Find the quotient.
36 ÷ 9

Step 1 Start with 36. Subtract 9 as many times as you can until you reach 0. Write the answers.

Step 2 Count the number of times you subtract 9.

You subtracted 9 **four** times.

So, 36 ÷ 9 = 4.

Find the quotient.

1. 9 ÷ 9 = ____ **2.** 27 ÷ 9 = ____ **3.** 18 ÷ 9 = ____

4. 36 ÷ 9 = ____ **5.** ____ = 72 ÷ 9 **6.** ____ = 63 ÷ 9

7. 45 ÷ 9 = ____ **8.** ____ = 18 ÷ 9 **9.** ____ = 54 ÷ 9

10. $9\overline{)63}$ **11.** $9\overline{)81}$ **12.** $9\overline{)36}$

13. $8\overline{)48}$ **14.** $4\overline{)36}$ **15.** $7\overline{)28}$

© Houghton Mifflin Harcourt Publishing Company

Name _____

Problem Solving • Two-Step Problems

Chloe bought 5 sets of books. Each set had the same number of books. She donated 9 books to her school. Now she has 26 books left. How many books were in each set that Chloe bought?

Read the Problem	Solve the Problem
What do I need to find? I need to find how many books were in each set.	First, begin with the number of books left. Add the number of books donated. books left ↓ 26 + books donated ↓ 9 = t, total number of books ↓ t 35 = t Then divide to find the number of books in each set. t, total number of books ↓ 35 ÷ sets of books ↓ 5 = s, books in each set ↓ s 7 = s So, 7 books were in each set.
What information do I need to use? I need to use the information given: Chloe bought 5 sets of books. She donated 9 books. She has 26 books left.	
How will I use the information? I will use the information to act out the problem.	

Solve the problem.

1. Jackie had 6 equal packs of pencils. Her friend gave her 4 more pencils. Now she has 52 pencils. How many pencils were in each pack?

_____

2. Tony had 4 equal sets of sports cards. He gave his friends 5 cards. Now he has 31 cards. How many cards were in each set?

_____

© Houghton Mifflin Harcourt Publishing Company

Order of Operations

Danny buys a marker for $4. He also buys 5 pens for $2 each. How much money does he spend?

You can write $\$4 + 5 \times \$2 = c$ to describe and solve the problem.

Find $\$4 + 5 \times \$2 = c$.

When there is more than one type of operation in a problem, use the **order of operations**, or the set of rules for the order in which to do operations.

Order of Operations

First: Multiply and divide from left to right.

Then: Add and subtract from left to right.

Step 1 Multiply from left to right.

$\$4 + \underbrace{5 \times \$2}_{\uparrow \text{ multiply}} = c$

$\$4 + \$10 = c$

Step 2 Next, add from left to right.

$\underbrace{\$4 + \$10}_{\uparrow \text{ add}} = c$

$\$14 = c$

So, Danny spends $14 .

Write *correct* if the operations are listed in the correct order. If not correct, write the correct order of operations.

1. $5 + 6 \times 3$ add, multiply

_____

2. $20 \div 4 - 3$ divide, subtract

_____

Follow the order of operations to find the unknown number.

3. $9 - 7 + 2 = k$

$k =$ ____

4. $8 + 2 \times 5 = m$

$m =$ ____

5. $7 \times 8 - 6 = g$

$g =$ ____

6. $16 + 4 \div 2 = s$

$s =$ ____

7. $12 - 6 \div 2 = y$

$y =$ ____

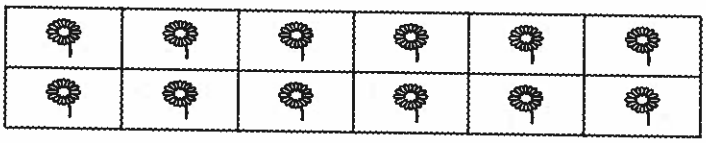
8. $36 \div 6 + 13 = f$

$f =$ ____

© Houghton Mifflin Harcourt Publishing Company

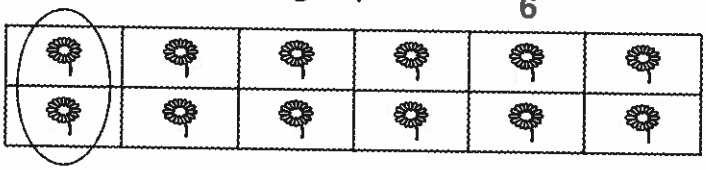
Find Part of a Group Using Unit Fractions

Lauren bought 12 stamps for postcards. She gave Brianna $\frac{1}{6}$ of them. How many stamps did Lauren give to Brianna?



Step 1 Find the total number of stamps. 12 stamps

Step 2 Since you want to find $\frac{1}{6}$ of the group, there should be 6 equal groups. Circle one of the groups to show $\frac{1}{6}$.



Step 3 Find $\frac{1}{6}$ of the stamps. How many stamps are in 1 group? 2 stamps

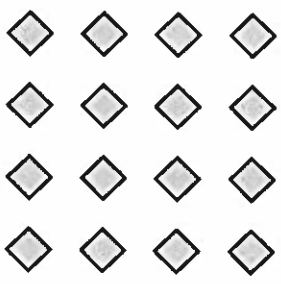
So, Lauren gave Brianna 2 stamps. $\frac{1}{6}$ of 12 = 2

Circle equal groups to solve. Count the number of shapes in 1 group.

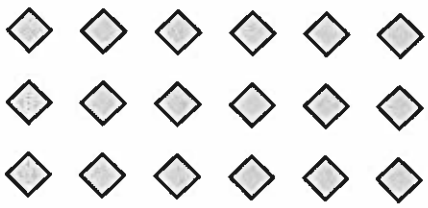
1. $\frac{1}{4}$ of 8 = _____

2. $\frac{1}{3}$ of 9 = _____

3. $\frac{1}{4}$ of 16 = _____



4. $\frac{1}{6}$ of 18 = _____



© Houghton Mifflin Harcourt Publishing Company

Problem Solving • Find the Whole Group Using Unit Fractions

There are 3 apple juice boxes in the cooler. One fourth of the juice boxes in the cooler are apple juice. How many juice boxes are in the cooler?

Read the Problem	Solve the Problem
What do I need to find? I need to find how many juice boxes are in the cooler.	**Describe how to draw a diagram to solve.** The denominator in $\frac{1}{4}$ tells you that there are 4 parts in the whole group. Draw 4 circles to show 4 parts.
What information do I need to use? There are 3 apple juice boxes. One fourth of the juice boxes are apple juice.	Since 3 juice boxes are $\frac{1}{4}$ of the group, draw 3 counters in the first circle. Since there are 3 counters in the first circle, draw 3 counters in each of the remaining circles. Then count all of the counters.
How will I use the information? I will use the information in the problem to draw a diagram.	So, there are 12 juice boxes in the cooler.

1. Max has 3 beta fish in his fish tank. One half of his fish are beta fish. How many fish does Max have in his tank?

2. Two boys are standing in line. One sixth of the students in line are boys. How many students are standing in line?

© Houghton Mifflin Harcourt Publishing Company

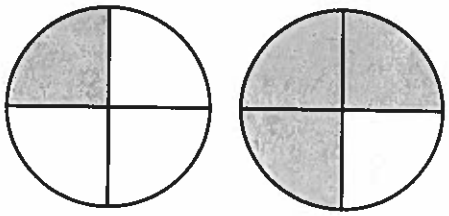
Compare Fractions with the Same Denominator

Pete's Prize Pizzas makes a special pizza. Of the toppings, $\frac{1}{4}$ is peppers and $\frac{3}{4}$ is ham. Does the pizza have more peppers or ham?

Compare $\frac{1}{4}$ and $\frac{3}{4}$.

Step 1 The denominators of both fractions are the same, 4. Use fraction circles divided into fourths to model the fractions.

Step 2 Shade 1 part of the first circle to show $\frac{1}{4}$.
Shade 3 parts of the second circle to show $\frac{3}{4}$.



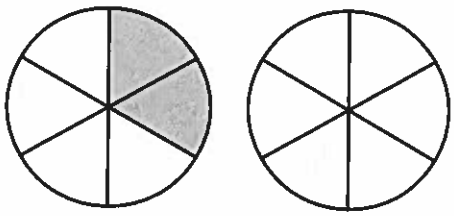
Step 3 Compare. 3 parts is more than 1 part.

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

So, the pizza has more **ham.**

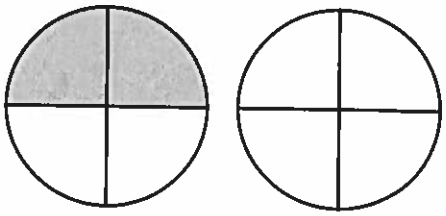
Compare. Write <, >, or =.

1.



$\frac{2}{6} \bigcirc \frac{1}{6}$

2.



$\frac{2}{4} \bigcirc \frac{2}{4}$

3. $\frac{1}{3} \bigcirc \frac{2}{3}$

4. $\frac{5}{8} \bigcirc \frac{3}{8}$

5. $\frac{1}{4} \bigcirc \frac{3}{4}$

6. $\frac{4}{8} \bigcirc \frac{4}{8}$

© Houghton Mifflin Harcourt Publishing Company

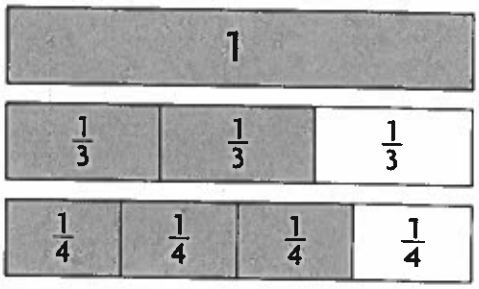
Compare Fractions

Mrs. Brown's recipe uses $\frac{2}{3}$ cup of flour. Mrs. Young's recipe uses $\frac{3}{4}$ cup of flour. Which recipe uses more flour?

Compare $\frac{2}{3}$ and $\frac{3}{4}$.

- You can compare fractions using fraction strips.

Step 1 Model each fraction.



Step 2 Compare the lengths of the models. The length of the $\frac{3}{4}$ model is greater than the length of the $\frac{2}{3}$ model.

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

So, Mrs. Young's recipe uses more flour.

Compare $\frac{3}{6}$ and $\frac{4}{6}$. Which is greater?

- The denominators are the same, so compare the numerators.

$3 < 4$, so $\frac{3}{6} < \frac{4}{6}$.

So, $\frac{4}{6}$ is greater than $\frac{3}{6}$. $\frac{4}{6} > \frac{3}{6}$

Compare. Write <, >, or =. Write the strategy you used.

1. $\frac{2}{8} \bigcirc \frac{3}{8}$

_____

2. $\frac{7}{8} \bigcirc \frac{5}{6}$

_____

3. $\frac{3}{4} \bigcirc \frac{3}{6}$

_____

4. $\frac{3}{6} \bigcirc \frac{5}{6}$

_____

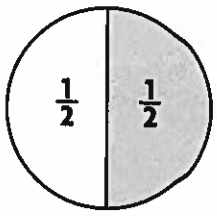
© Houghton Mifflin Harcourt Publishing Company

Model Equivalent Fractions

Equivalent fractions are two or more fractions that name the same amount.

You can use fraction circles to model equivalent fractions.

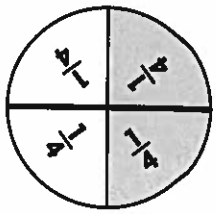
Find a fraction that is equivalent to $\frac{1}{2}$. $\frac{1}{2} = \frac{\square}{4}$



Step 1 Look at the first circle. It is divided into 2 equal parts. Shade one part to show $\frac{1}{2}$.

Step 2 Draw a line to divide the circle into 4 equal parts because 4 is the denominator in the second fraction.

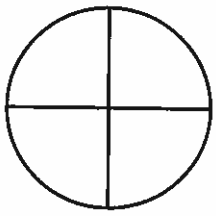
Step 3 Count the number of parts shaded now. There are 2 parts out of 4 parts shaded.



$\frac{1}{2} = \frac{2}{4}$ So, $\frac{1}{2}$ is equivalent to $\frac{2}{4}$.

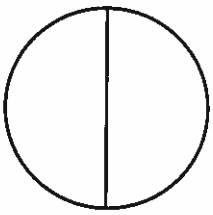
Shade the model. Then divide the pieces to find the equivalent fraction.

1.



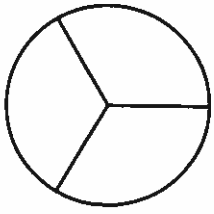
$\frac{1}{4} = \frac{\square}{8}$

2.



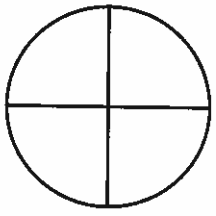
$\frac{1}{2} = \frac{\square}{8}$

3.



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

4.



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

© Houghton Mifflin Harcourt Publishing Company

Measure Time Intervals

Julia starts her homework at 4:20 P.M. She finishes at 5:00 P.M. How much time does Julia spend doing homework?

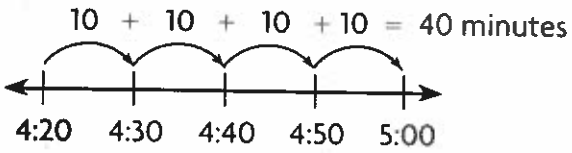
Elapsed time is the amount of time that passes from the start of an activity to the end of the activity.

Use a number line to find elapsed time.

Step 1 Begin with the start time, 4:20.

Step 2 Skip count **by tens** to count the minutes from 4:20 to 5:00.

Step 3 Label the number line. Draw jumps for every 10 minutes until you get to 5:00.



Step 4 Add the minutes that have elapsed. 40 minutes

So, Julia spends 40 minutes doing homework.

Use the number line to find the elapsed time.

1. Start: 3:15 P.M. End: 3:45 P.M.

_____

2. Start: 11:05 A.M. End: 11:56 A.M.

_____

Find the elapsed time.

3. Start: 4:10 P.M. End: 4:46 P.M.

_____

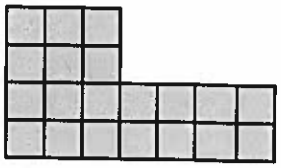
4. Start: 10:30 A.M. End: 10:59 A.M.

_____

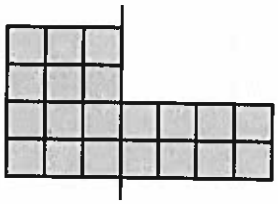
© Houghton Mifflin Harcourt Publishing Company

Area of Combined Rectangles

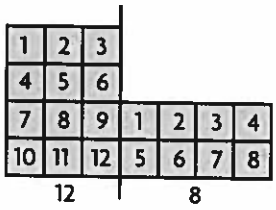
You can break apart a figure into rectangles to find the total area of the figure.



Step 1 Draw a line to break apart the figure into two rectangles.



Step 2 Count the number of unit squares in each rectangle.



Step 3 Add the number of unit squares in each rectangle to find the total area.

$12 + 8 = 20$ unit squares

So, the area of the figure is 20 square units.

Draw a line to break apart the figure into rectangles. Find the area of the figure.

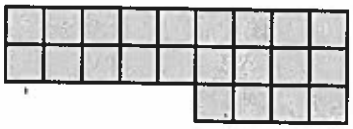
1.

_____

2.

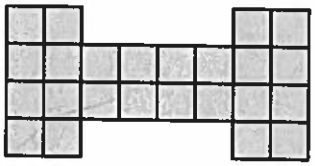
_____

3.



_____

4.



_____

© Houghton Mifflin Harcourt Publishing Company

Describe Plane Shapes

You can use math words to describe plane shapes.

point

an exact position or location

line

a straight path that goes in two directions without end

endpoints

points that are used to show segments of lines

line segment

part of a line and has 2 endpoints

ray

part of a line that has 1 endpoint and continues in one direction

A **plane shape** is a shape on a flat surface. It is formed by points that make curved paths, line segments, or both. Plane shapes can be open or closed.

A **closed shape** starts and ends at the same point.

An **open shape** does not start and end at the same point.

Look at this plane shape called a triangle.

It is a **closed shape.**

It has **3 line segments.**

The line segments meet at the **endpoints.**

Circle all the words that describe the shape.

1.

line
line segment

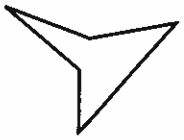
2.

point
ray

3.

closed shape
open shape

4.



closed shape
open shape

Write whether the shape is *open* or *closed*.

5.

_____

6.

_____

7.

_____

8.

_____

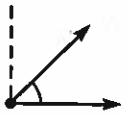
© Houghton Mifflin Harcourt Publishing Company

Describe Angles in Plane Shapes

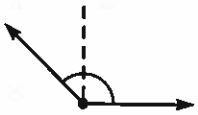
There are different types of angles.

A **right angle** forms a square corner.

Some angles are less than a right angle.



Some angles are greater than a right angle.

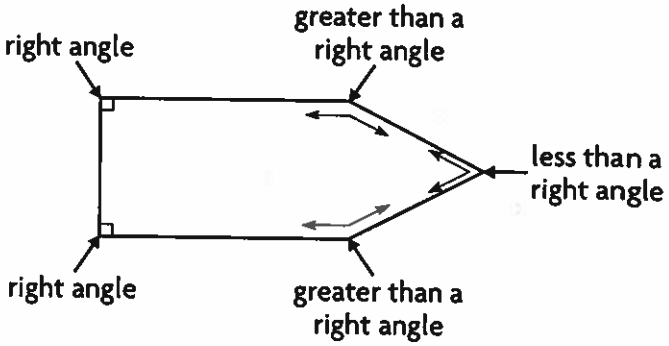


Look at this shape. Describe the angles.

There are 2 right angles.

There are 2 angles greater than a right angle.

There is 1 angle less than a right angle.

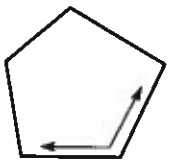


Use the corner of a sheet of paper to tell whether the angle is a *right angle, less than a right angle,* or *greater than a right angle.*

1.

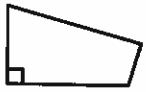
_____

2.



_____

3.



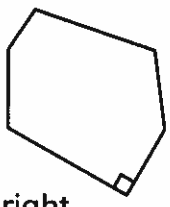
_____

Write how many of each type of angle the shape has.

4.

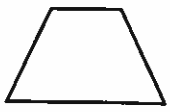
____ right
____ less than a right
____ greater than a right

5.



____ right
____ less than a right
____ greater than a right

6.



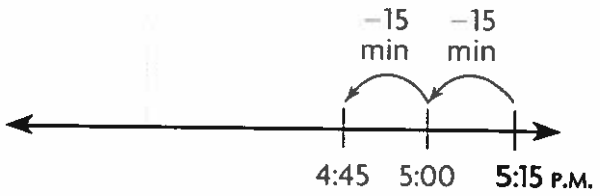
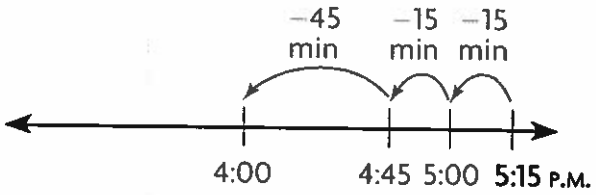
____ right
____ less than a right
____ greater than a right

© Houghton Mifflin Harcourt Publishing Company

Name _____

Problem Solving • Time Intervals

As soon as Carter got home, he worked on his book report for 45 minutes. Then he did chores for 30 minutes. He finished at 5:15 P.M. At what time did Carter get home?

Read the Problem	Solve the Problem
What do I need to find? I need to find what **time** Carter got **home**.	• Find Carter's 5:15 P.M. finishing time on the number line. • Count back 30 minutes using two 15-minute jumps to find the time Carter started his chores. **4:45 P.M.**
What information do I need to use? Carter worked for **45 minutes** on his report. He did chores for **30 minutes**. He finished at **5:15 P.M.**.	 • Count back 45 minutes for the time Carter worked on his report. The jumps end at **4:00 P.M.**
How will I use the information? I will use a number line and count back to find the time Carter got home.	 So, Carter got home at **4:00 P.M.**

1. Kiera must be at school at 7:45 A.M. The ride to school takes 15 minutes. She needs 45 minutes to eat breakfast and get ready. At what time should Kiera get up?

2. Jack and his family go to the movies. First, they eat lunch at 1:30 P.M. It takes them 40 minutes to eat. Then they drive 25 minutes to get to the movie theater. At what time do Jack and his family get to the theater?

© Houghton Mifflin Harcourt Publishing Company