

Name _____

Represent Division

I Can use the information in a division problem to represent the number of equal groups or the number in each equal group.

Florida's B.E.S.T.

- Number Sense & Operations 3.NSO.2.2
- Mathematical Thinking & Reasoning
MTR.1.1, MTR.2.1, MTR.4.1, MTR.5.1,
MTR.6.1, MTR.7.1



UNLOCK the Problem Real World

Stacy has 16 flowers. She puts an equal number of flowers in each of 4 vases. How many flowers does Stacy put in each vase?

Use the graphic organizer below to solve the problem.



Read the Problem

What do I need to find?

I need to find the number
of _____ Stacy puts in
each _____.

What information do I need to use?

Stacy has _____ flowers.
She puts an equal number
of flowers in each of
_____ vases.

How will I use the information?

I will act out the problem
by making equal _____ with
counters.

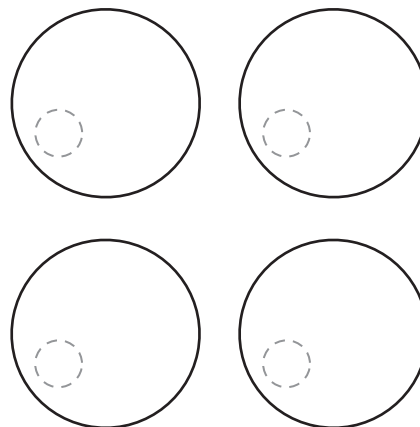
Solve the Problem

Describe how to act out the problem to solve.

First, count out _____ counters.

Next, make _____ equal groups. Place
1 counter at a time in each group until
all 16 counters are used.

Last, draw the equal groups by completing the
picture below.



So, Stacy puts _____ flowers in each vase.

Try Another Problem

Jamal is at the pet store. He buys 21 dog treats. If he plans to give each dog 3 treats, how many dogs does he feed?



Read the Problem	Solve the Problem
What do I need to find?	Describe how to act out the problem to solve.
What information do I need to use?	
How will I use the information?	

- How can you check that your answer is reasonable? _____



MTR Engage in discussions on mathematical thinking.
4.1

How does a strategy like *acting it out* help you solve a problem?

Share and Show

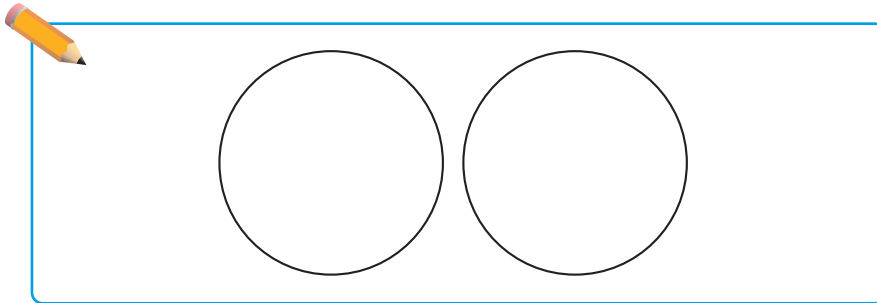
- ✓ 1. Mariana is having a party. She has 16 cups. She puts them in 2 equal stacks. How many cups are in each stack?

First, decide how to act out the problem.

You can use counters to represent the _____.

You can draw _____ to represent the stacks.

Then, draw to find the number of _____ in each stack.



There are _____ groups. There are _____ counters in each group.

So, there are _____ cups in each stack.

- ✓ 2. **MTR** What if Mariana has 24 cups and puts them in 4 stacks of 4 cups in each? How many more stacks can she make with the remaining cups?

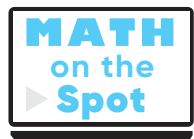
On Your Own

3. At Fernando's school party, the children make teams of 5 to play a game. If there 35 children, how many teams are there?

4. Anne put 20 party hats and 20 balloons on 4 tables. She put an equal number of hats and an equal number of balloons on each table. How many hats and how many balloons did she put on each table?

Unlock the Problem

- ✓ Use the Problem Solving MathBoard.
- ✓ Underline important facts.
- ✓ Choose a strategy you know.



Problem Solving · Applications

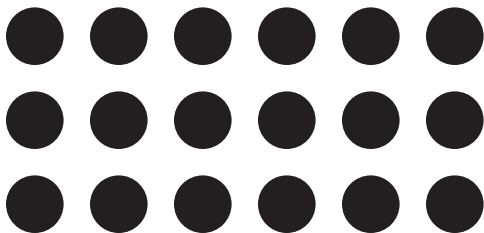
Use the table for Problems 5 and 6.

5. Sadie is planning a party in a park. She wants to use 4 trees to hang her decorations. Sadie hangs the same number of each type of decoration on each tree. How many balloons will she tie to each tree? How many ribbons will she tie to each tree?

6. Sadie hangs the same number of pictures on each of the 4 trees. How many pictures does she hang on each tree? Explain how to act out the situation to find out.

7. Ira and his brother share a model-car collection. Ira has 25 cars, and his brother has 15 cars. They store all the model cars on a bookshelf and place an equal number of cars on each shelf. There are 5 shelves. How many model cars are on each shelf?

8. Miguel gave 2 party favors to each of the children at his party. He gave away 18 party favors. How many children were at Miguel's party?



Circle equal groups to model the problem.

_____ children



Sadie's Party Supplies

Decoration	How Many
Ribbons	16
Balloons	20
Pictures	4

Show the Math

Demonstrate Your Thinking

Represent Division

Go Online

Interactive Examples

Solve each problem.


1. Six customers at a toy store bought 18 jump ropes altogether. Each customer bought the same number of jump ropes. How many jump ropes did each customer buy?

3 jump ropes

2. Hiro has 36 pictures of his summer trip. He wants to put them in an album. Each page of the album holds 4 pictures. How many pages will Hiro need for his pictures?

3. Katia has 42 crayons in a box. She buys a storage bin that has 6 sections. She puts the same number of crayons in each section. How many crayons does Katia put in each section of the storage bin?

4. Ms. Rivera's students give cards to each of the 3 class helpers. There are 24 cards. How many cards will each helper get if the students give an equal number of cards to each helper?

5.  **WRITE** *Math* Write a word problem about equal groups and act it out to solve.

Lesson Check

6. Maria buys 15 apples at the store and places them into bags. She puts 5 apples into each bag. How many bags does Maria use for all the apples?
7. Andres's neighbor is fixing a section of his walkway. He has 32 bricks that he is placing in 8 equal rows. How many bricks will Andres's neighbor place in each row?

Spiral Review

8. Find the unknown factor.

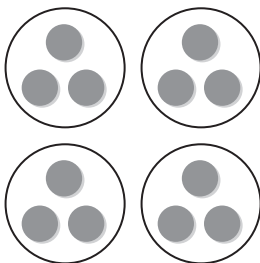
$$7 \times \square = 56$$

9. Count by tens and ones to find $27 + 33$. Use the number line to show your thinking. Then complete the equation.



$$27 + 33 =$$

10. Count equal groups to find how many counters there are.



11. What is another way to group the factors?

$$(3 \times 2) \times 5$$

Name _____

Find the Size of Equal Groups

I Can model a division problem to find how many in each equal group.

Florida's B.E.S.T.

- Number Sense & Operations 3.NSO.2.2
- Mathematical Thinking & Reasoning
MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1,
MTR.5.1, MTR.6.1, MTR.7.1



UNLOCK the Problem Real World

Hector has 12 rocks from a nearby park. He puts an equal number of his rocks in each of 3 boxes. How many rocks are in each box?

When you multiply, you put equal groups together. When you **divide**, you separate into equal groups.

You can divide to find the number in each group.

Activity Use counters to model the problem.

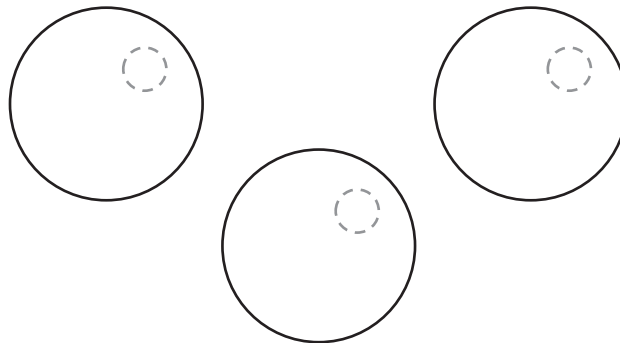
Materials ■ counters ■ MathBoard

STEP 1

Use 12 counters.

STEP 2

Draw 3 circles on your MathBoard. Place 1 counter at a time in each circle until all 12 counters are used. Draw the rest of the counters to show your work.



There are _____ counters in each group.

So, there are _____ rocks in each box.

- What do you need to find?

- Circle the numbers you need to use.

Try This!

Madison has 15 rocks. She puts an equal number of rocks in each of 5 boxes. How many rocks are in each box?

STEP 1

Draw 5 squares to show 5 boxes.



STEP 2

Draw 1 counter in each square to show the rocks. Continue drawing 1 counter at a time in each box until all 15 counters are drawn.

There are _____ counters in each group.

So, there are _____ rocks in each box.

**Math
Talk**

MTR
4.1 Engage in discussions on mathematical thinking.

Describe another way to arrange 15 counters to make equal groups.

1. How many counters did you draw? _____
2. How many equal groups did you make? _____
3. How many counters are in each group? _____

Share and Show**Math Board**

1. Jon has 8 counters. He makes 4 equal groups.
Draw a picture to show the number of counters in each group.

**Math Talk**
MTR 2.1 Demonstrate understanding in multiple ways.

Explain how you made the groups equal.

Use counters or draw a quick picture on your MathBoard. Make equal groups. Complete the table.

	Counters	Number of equal groups	Number in each group
✓ 2.	10	2	
✓ 3.	24	6	

On Your Own

Use counters or draw a quick picture on your MathBoard. Make equal groups. Complete the table.

	Counters	Number of equal groups	Number in each group
4.	14	7	
5.	21	3	

6. Xavier and Jody collected 20 stamps. Xavier says they can put an equal number of stamps on each of 5 pages of their album. Jody says they can put an equal number on each of 4 pages. Whose statement makes sense? Explain.

Problem Solving · Applications

Use the table for 7 and 8.

7. Maricela puts all of her photos in a photo album. She puts an equal number of photos on each of 4 pages in her album. How many photos are on each page?

8. Joe and Ella combine their photos. Then they put an equal number on each page of an 8-page photo album. How many photos are on each page?

9. **MTR** Tanisha found 28 seashells. Can she share all the seashells equally among the 6 people in her family? Explain.

10. Zana has 9 rocks from a trip. She puts an equal number of rocks in each of 3 bags. How many rocks are in each bag?

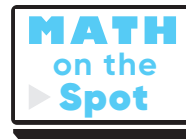
Circle the amount to complete the sentence.

There are

3
6
12
27

 rocks in each bag.

Photos	
Name	Number of photos
Maricela	28
Joe	25
Ella	15



Find the Size of Equal Groups

Go Online

Interactive Examples

Use counters or draw a quick picture. Make equal groups. Complete the table.

	Counters	Number of equal groups	Number in each group
1.	15	3	5
2.	21	7	
3.	28	7	
4.	32	4	
5.	9	3	
6.	35	5	
7.	24	3	

Problem Solving

8. Alicia has 12 eggs that she will use to make 4 different cookie recipes. If each recipe calls for the same number of eggs, how many eggs will she use in each recipe?
9. Basir picked 27 flowers from the garden. He plans to give an equal number of flowers to each of 3 people. How many flowers will each person get?

10.  Describe how to divide 18 strawberries equally between 2 of your friends.

Lesson Check

11. Ryan has 21 pencils. He wants to put the same number of pencils in each of 3 pencil holders. How many pencils will he put in each pencil holder?
12. Mahreen is setting out 24 plates on 6 tables for a dinner. She sets the same number of plates on each table. How many plates does Mahreen set on each table?

Spiral Review

13. Each table has 4 legs. How many legs do 4 tables have?
14. Jun has 3 stacks of 4 boxes on each of 3 shelves. How many boxes does Jun have?

15. What is the unknown factor?

$$7 \times \blacksquare = 35$$

16. Describe a pattern in the table. Then complete the pattern

Number of packs	1	2	3	4	5
Number of yo-yos	3	6	9	12	?

Name _____

Find the Number of Equal Groups

I Can model a division problem to find how many equal groups.

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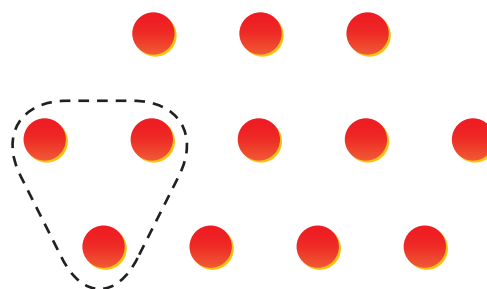
UNLOCK the Problem **Real World**

Juan wants to put 12 shells in some boxes. He wants to put 3 shells in each box. How many boxes does he need for his shells?

- Underline what you need to find.
- How many shells does Juan want to put in each box?

Make equal groups.

- Look at the 12 counters.
- Circle a group of 3 counters.
- Continue circling groups of 3 until all 12 counters are in groups.



There are _____ groups of counters.

So, Juan needs _____ boxes for his shells.

Math Talk

MTR 5.1 Use patterns and structure.

How would the drawing change if Juan wanted to put his shells in groups of 4?



Try This!

Sarah has 15 shells which she put in groups of 5. She wants to put each group of shells in a box. How many boxes does she need for her shells?

STEP 1

Draw 15 counters.

STEP 2

Make a group of 5 counters by drawing a circle around them. Continue circling groups of 5 until all 15 counters are in groups.

There are _____ groups of 5 counters.

So, Sarah needs _____ boxes for her shells.

- What if Sarah puts her 15 shells in groups of 3?

How many boxes does she need? _____

Draw a quick picture to show your work.



Share and Show



- Tamika has 12 counters. She puts them in groups of 2. Draw a picture to show the number of groups.



MTR 4.1 Engage in discussions on mathematical thinking.

How do you find the number of equal groups when you divide?

Draw counters on your MathBoard. Then circle equal groups. Complete the table.

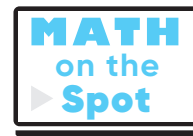
	Counters	Number of equal groups	Number in each group
✓ 2.	20		4
✓ 3.	24		3

On Your Own

Draw counters on your MathBoard. Then circle equal groups. Complete the table.

	Counters	Number of equal groups	Number in each group
4.	18		2
5.	16		8

- A store has 18 red beach balls and 17 green beach balls mixed together in boxes of 5 beach balls each. How many boxes of beach balls are at the store?



Problem Solving · Applications



7. **MTR** A store has 24 beach towels in stacks of 6 towels each. How many stacks of beach towels are at the store?

a. What do you need to find? _____

b. How will you use what you know about making equal groups to solve the problem? _____

c. Draw equal groups to find how many stacks of beach towels there are at the store.

d. Complete the sentences.

The store has _____ beach towels.

There are _____ towels in each stack.

So, there are _____ stacks of beach towels at the store.

8. Write a problem about dividing beach toys into equal groups. Then solve the problem.

9. Dan's train is 27 inches long. If each train car is 3 inches long, how many train cars are there?

Choose a number from the box to complete the sentence.

There are _____ train cars.

6
7
8
9

Find the Number of Equal Groups

Go Online

Interactive Examples


Draw counters on your MathBoard. Then circle equal groups. Complete the table.

	Counters	Number of equal groups	Number in each group
1.	24	3	8
2.	35		7
3.	30		5
4.	16		4
5.	12		6
6.	36		9
7.	18		3

Problem Solving

8. In his bookstore, Julio places 21 books on shelves, with 7 books on each shelf. How many shelves does Julio need?

9. Mr. Holden has 32 quarters in stacks of 4 on his desk. How many stacks of quarters are on his desk?

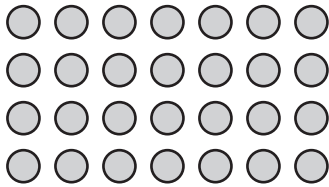
10.  **WRITE** *Math* Write and solve a math problem in which you need to find how many equal groups.

Lesson Check

11. Darius works at a clothing store. He puts 24 pairs of jeans into stacks of 8. How many stacks does Darius make?
12. There are 36 people waiting in line for a hay ride. Only 6 people can ride on each wagon. If each wagon is full, how many wagons are needed for all 36 people?

Spiral Review

13. What equation does the array show?



15. What property does the equation show?

$$8 + 0 = 8$$

16. Each month for 6 months, Gisela completes 5 paintings. How many more paintings does she need to complete so that she has 38 paintings?

Name _____

Represent Division with Bar Models

I Can use a bar model to represent and solve division problems.

Florida's B.E.S.T.

- Number Sense & Operations 3.NSO.2.2
- Mathematical Thinking & Reasoning
MTR.1.1, MTR.2.1, MTR.4.1, MTR.5.1,
MTR.7.1



UNLOCK the Problem Real World

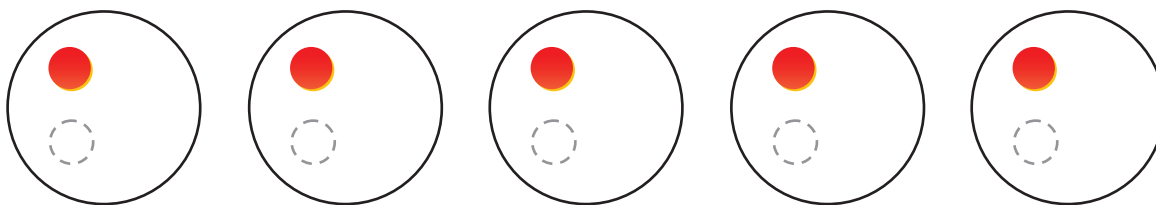
A dog trainer has 20 dog treats for 5 dogs in his class. If each dog gets the same number of treats, how many treats will each dog get?

- What do you need to find?

Activity 1 Use counters to find how many in each group.

Materials ■ counters ■ MathBoard

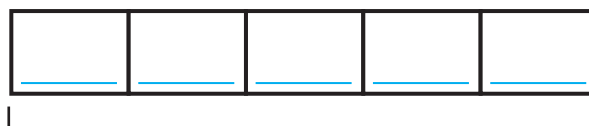
- Use 20 counters.
- Draw 5 circles on your MathBoard.
- Place 1 counter at a time in each circle until all 20 counters are used.
- Draw the rest of the counters to show your work.



There are _____ counters in each of the 5 groups.

A bar model can show how the parts of a problem are related.

- Complete the bar model to show 20 dog treats divided into 5 equal groups.



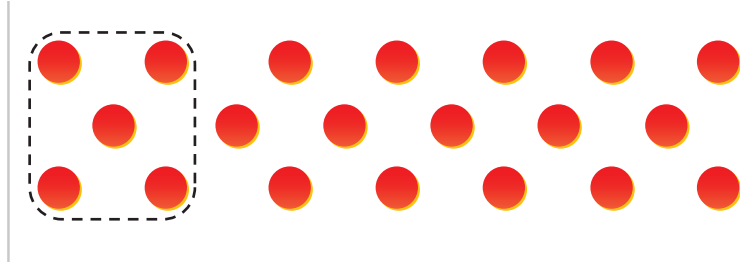
20 dog treats

So, each dog will get _____ treats.

Activity 2 Draw to find how many equal groups.

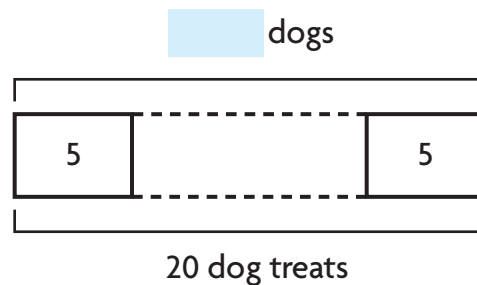
A dog trainer has 20 dog treats. If the dog trainer gives 5 treats to each dog in the class, how many dogs are in the class?

- Look at the 20 counters.
- Circle a group of 5 counters.
- Continue circling groups of 5 until all 20 counters are in groups.



There are _____ groups of 5 counters.

- Complete the bar model to show 20 treats divided into groups of 5 treats.



So, there are _____ dogs in the class.

Here are two ways to record division.

Write: $20 \div 5 = 4$

\uparrow \uparrow \uparrow
dividend **divisor** **quotient**

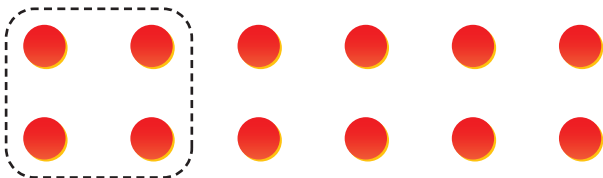
$$\begin{array}{r} 4 \leftarrow \text{quotient} \\ \text{divisor} \rightarrow 5 \overline{)20} \\ \uparrow \\ \text{dividend} \end{array}$$

Read: Twenty divided by five equals four.

Share and Show

Math Board

1. Complete the picture to find $12 \div 4$. _____



Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

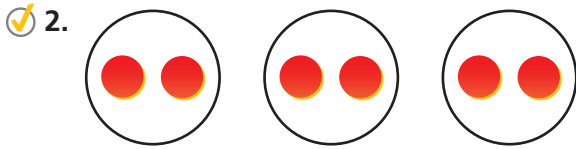
Describe how you solved the problem in Activity 2. Use the terms *dividend*, *divisor*, and *quotient* in your explanation.

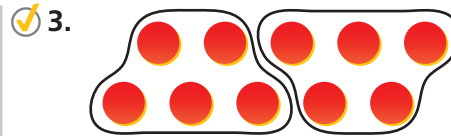
Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How do you know how many groups to make?

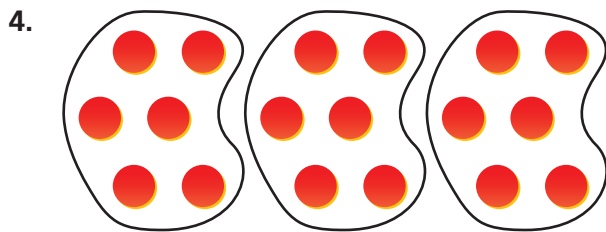
Write a division equation for the picture.

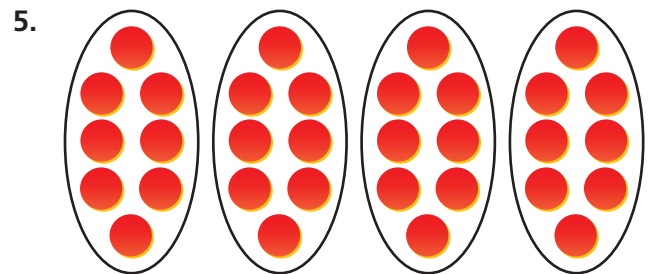




On Your Own

Write a division equation for the picture.





Make equal groups to find the quotient. Draw a quick picture to show your work.

6. $20 \div 2$

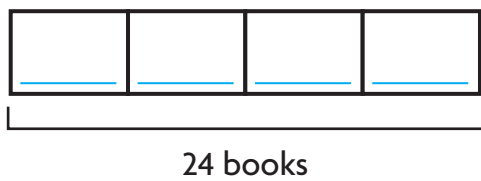
7. $27 \div 9$

8. $20 \div 5$

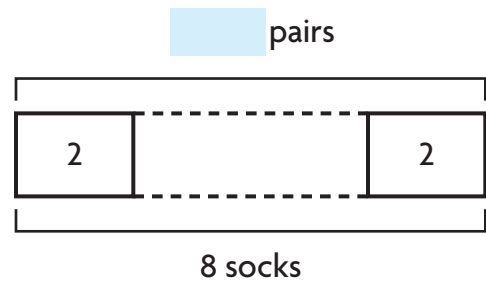
9. $18 \div 3$

Complete the bar model to solve. Then write a division equation for the bar model.

10. There are 24 books in 4 equal stacks. How many books are in each stack?



11. There are 8 matching socks. How many pairs of socks can you make?



Problem Solving · Applications

Use the table for 12 and 13.

12. **MTR** Pat bought one box of Chew Sticks to share equally between his 2 dogs. Mia bought one box of Chewies to share equally among her 5 dogs. How many more treats will each of Pat's dogs get than each of Mia's dogs? Explain.

13. Kevin bought a box of Puppy Chips for his dog. If he gives his dog 5 treats each day, for how many days will one box of treats last?

14. Write and solve a problem for $42 \div 7$ in which the quotient is the number of groups.

15. Elian buys 5 bags of treats. He buys 15 treats in all. How many treats are in each bag?



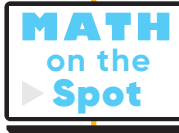
_____ treats



Dog Treats	
Type	Number in box
Chew Sticks	14
Chewies	25
Dog Bites	30
Puppy Chips	45

Show the Math

Demonstrate Your Thinking



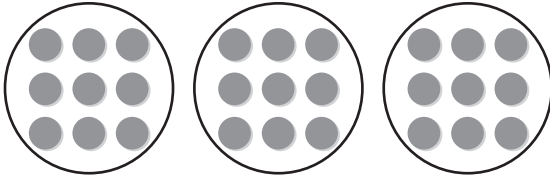
Represent Division with Bar Models

Go Online

Interactive Examples

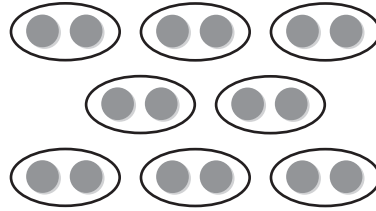
Write a division equation for the picture.

1.



$$27 \div 3 = 9 \text{ or } 27 \div 9 = 3$$

2.



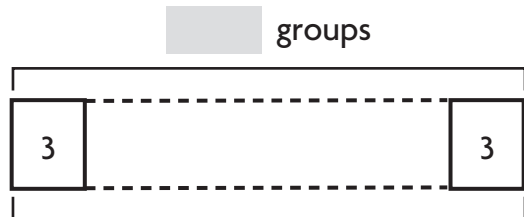
Complete the bar model to solve. Then write a division equation for the bar model.

3. There are 15 postcards in 3 equal stacks. How many postcards are in each stack?



15 postcards

4. There are 21 key rings. How many groups of 3 key rings can you make?



21 key rings

Problem Solving

5. Jalyn collected 24 stones. She put them in 4 equal piles. How many stones are in each pile?
6. Tyrese has 30 stickers. He puts 6 stickers on each page. On how many pages does he put stickers?

7. **WRITE**  *Math* Describe how to find the number of \$4 train tickets you can buy with \$32.

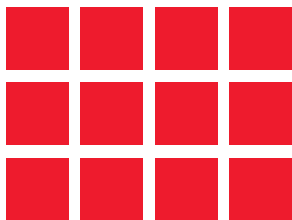
Lesson Check

8. Tai and a friend are stacking 24 blocks. They put the blocks in 3 equal stacks. How many blocks are in each stack?
9. Melissa made 45 greeting cards. She put them in 5 equal piles. How many cards did she put in each pile?

Spiral Review

10. Luz puts 1 stamp on each envelope. She puts stamps on 7 envelopes. How many stamps does Luz use?
11. A carnival ride has 8 cars. Each car holds 4 people. How many people are on the ride if all the cars are full?

12. Mr. Martinez's tomato garden has 3 rows with 4 tomato plants in each row. How many tomato plants are in his garden?
13. Justina has 516 pennies in a jar and 198 pennies in a bowl. How many pennies does Justina have? Use expanded form to find the sum.



Name _____

Relate Subtraction and Division

I Can show how division and subtraction are related. I can use repeated subtraction or a number line to solve division problems.

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UNLOCK the Problem Real World

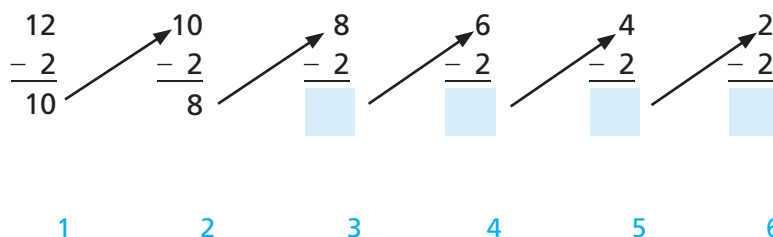
Serena and Mandy brought a total of 12 newspapers to school for the recycling program. Each girl brought in one newspaper each day. For how many days did the girls bring in newspapers?

- How many newspapers were brought in altogether?

- How many newspapers did the two girls bring in altogether each day?

One Way Use repeated subtraction.

- Start with 12.
- Subtract 2 until you reach 0.
- Count the number of times you subtract 2.



Number of times you subtract 2:

! Common Error

Be sure to keep subtracting 2 until you are unable to subtract 2 anymore.

Since you subtract 2 six times, there are _____ groups of 2 in 12.

So, Serena and Mandy brought in newspapers for _____ days.

Write: $12 \div 2 = 6$ or $2 \overline{)12}^6$

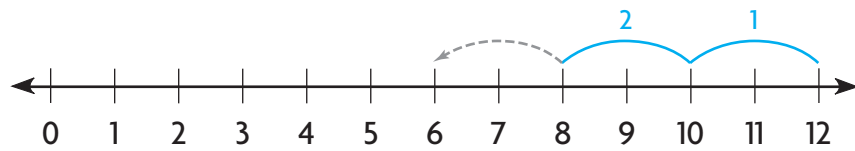
Read: Twelve divided by two equals six.



Another Way

Count back on a number line.

- Start at 12.
- Count back by 2s as many times as you can. Draw the rest of the jumps on the number line.
- Count the number of times you jumped back 2.



You jumped back by 2 six times.

There are ____ jumps of 2 in 12.

$12 \div 2 =$ ____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How does using a number line make solving a division problem easier?

- What do your jumps of 2 represent? _____

Share and Show

Math Board

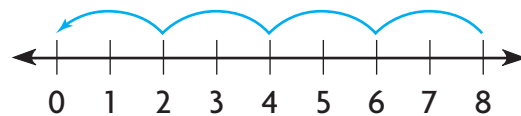
1. Draw the rest of the jumps on the number line to complete the division equation. $12 \div 4 =$ ____



Write a division equation.

✓ 2.
$$\begin{array}{r} 10 \\ - 5 \\ \hline 5 \end{array}$$
 \nearrow
$$\begin{array}{r} 5 \\ - 5 \\ \hline 0 \end{array}$$

✓ 3.



Math Talk

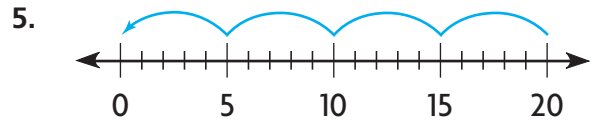
MTR 2.1 Demonstrate understanding in multiple ways.

How is counting back on a number line like using repeated subtraction to solve a division problem?

On Your Own

Write a division equation.

4.
$$\begin{array}{r} 28 \\ - 7 \\ \hline 21 \end{array}$$
 \nearrow
$$\begin{array}{r} 21 \\ - 7 \\ \hline 14 \end{array}$$
 \nearrow
$$\begin{array}{r} 14 \\ - 7 \\ \hline 7 \end{array}$$
 \nearrow
$$\begin{array}{r} 7 \\ - 7 \\ \hline 0 \end{array}$$



Use repeated subtraction or a number line to solve.

6. $18 \div 6 =$ _____

7. $9 \overline{)27}$

8. Write a word problem that can be solved by using one of the division equations above.

9. Sergio has a booklet of 30 stickers. He uses one page of stickers. If there are 6 stickers on each page, how many pages are left?

10. Tara has 32 beads. She takes out 4 red beads, then sorts the rest into 4 equal groups. How many beads are in each group?

11. Marquis has 30 grapes. He keeps 9 grapes for himself. Then he gives 7 grapes each to some of his friends. To how many friends does Marquis give grapes?

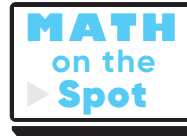
12. There are 16 dolphins in a pod. Each pod has the same number of males and females. The female dolphins are swimming in pairs. How many pairs of female dolphins are there?

Problem Solving · Applications

Use the graph for 13–15.

13. **MTR** Matt puts his box tops in 2 equal piles. How many box tops are in each pile?

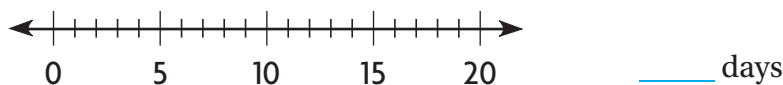
14. Paige brought an equal number of box tops to school each day for 5 days. Alma also brought an equal number of box tops each day for 5 days. How many box tops did the two students bring in altogether each day? Explain.



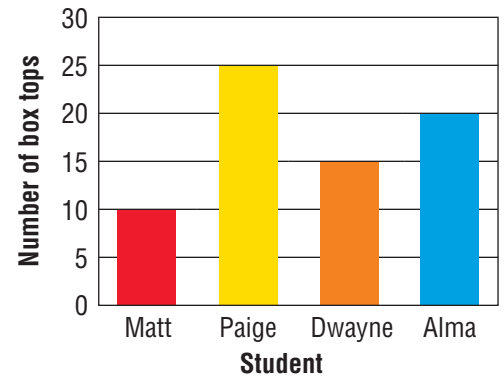
15. Dwayne collects another 15 box tops and puts all his box tops into bins. He puts an equal number in each bin. The answer is 5. What's the question?

16. Maya collected 4 box tops each day. She collected 20 box tops in all. For how many days did Maya collect box tops?

Draw jumps on the number line to model the problem.



Box Top Collections



Show the Math

Demonstrate Your Thinking

Relate Subtraction and Division

Go Online

Interactive Examples

Write a division equation.

$$\begin{array}{r}
 16 \\
 - 4 \\
 \hline
 12
 \end{array}
 \begin{array}{r}
 12 \\
 - 4 \\
 \hline
 8
 \end{array}
 \begin{array}{r}
 8 \\
 - 4 \\
 \hline
 4
 \end{array}
 \begin{array}{r}
 4 \\
 - 4 \\
 \hline
 0
 \end{array}$$

$$16 \div 4 = 4$$

$$\begin{array}{r}
 20 \\
 - 5 \\
 \hline
 15
 \end{array}
 \begin{array}{r}
 15 \\
 - 5 \\
 \hline
 10
 \end{array}
 \begin{array}{r}
 10 \\
 - 5 \\
 \hline
 5
 \end{array}
 \begin{array}{r}
 5 \\
 - 5 \\
 \hline
 0
 \end{array}$$

Use repeated subtraction or a number line to solve.

3. $28 \div 7 =$ _____

4. $18 \div 6 =$ _____

5. $8 \overline{)40}$

6. $9 \overline{)36}$

Problem Solving

7. Mrs. Costa has 18 pencils. She gives 9 pencils to each of her children for school. How many children does Mrs. Costa have?

8. Boël decides to plant rose bushes in her garden. She has 24 bushes. She places 6 bushes in each row. How many rows of rose bushes does she plant in her garden?

9.  **WRITE** *Math* Explain why you can use subtraction to solve a division problem.

Lesson Check

10. What division equation is shown?



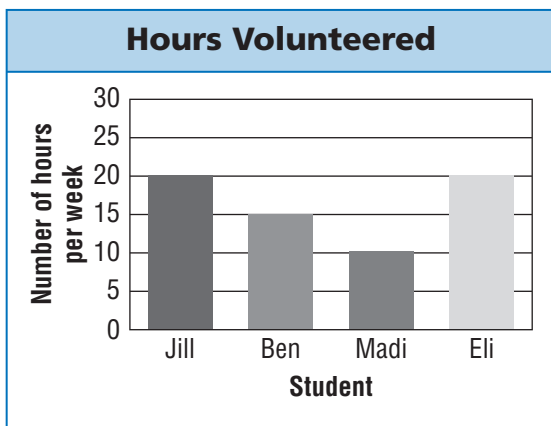
11. Isabella has 35 cups of dog food. She feeds her dogs 5 cups of food each day. For how many days will the dog food last?

Spiral Review

12. Lourdes buys 4 bags of oranges. There are 6 oranges in each bag. How many oranges does Lourdes buy?

13. Each month for 7 months, Samuel mows 3 lawns. How many more lawns does he need to mow if he wants to mow 29 lawns in all?

Use the graph for Problems 14 and 15.



14. How many hours did Eli volunteer in 5 weeks?

15. Madi and Jill volunteer for 6 weeks each. How many hours did they volunteer together?

Name _____

Represent Division with Arrays

I Can use arrays to find the number of objects in each row or the number of rows to solve division problems.

Investigate

Materials ■ square tiles

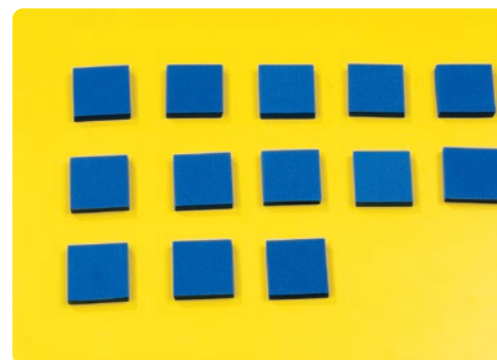
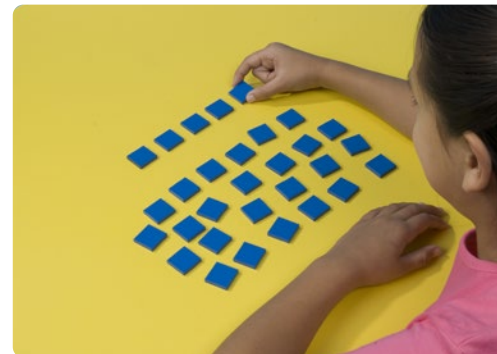
You can use arrays to model division and find equal groups. Make an array to find how many rows of 5 are in 30.

- Count out 30 tiles.
- Make a row of 5 tiles.
- Continue to make as many rows of 5 tiles as you can.

How many rows of 5 did you make? _____

Florida's B.E.S.T.

- Number Sense & Operations 3.NSO.2.2
- Mathematical Thinking & Reasoning MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.7.1



Draw Conclusions

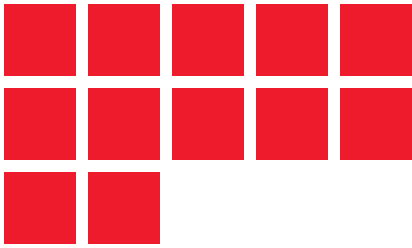
- Explain how you used the tiles to find the number of rows of 5 in 30.

- What multiplication equation could you write for the array? Explain.

- Tell how to use an array to find how many rows of 6 are in 30.

Make Connections

You can write a division equation to show how many rows of 5 are in 30. Show the array you made in Investigate by completing the drawing below.



Math Idea

You can divide to find the number of equal rows or to find the number in each row.

$$30 \div 5 = \blacksquare$$

There are _____ rows of 5 tiles in 30.

So, $30 \div 5 =$ _____.

Try This!

Count out 24 tiles. Make an array with 4 rows. Place 1 tile in each of the 4 rows. Then continue placing 1 tile in each row until you use all the tiles. Draw your array below.



**Math
Talk**

MTR
4.1 Engage in discussions on mathematical thinking.

How does making an array help you divide?

- How many tiles are in each row? _____
- What division equation can you write for your array? _____

Share and Show



Use square tiles to make an array. Solve.

1. How many rows of 3 are in 18?

✓ 2. How many rows of 6 are in 12?

3. How many rows of 7 are in 21?

4. How many rows of 8 are in 32?

Make an array. Then write a division equation.

5. 25 tiles in 5 rows

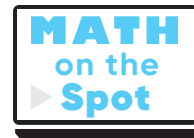
✓ 6. 14 tiles in 2 rows

7. 28 tiles in 4 rows

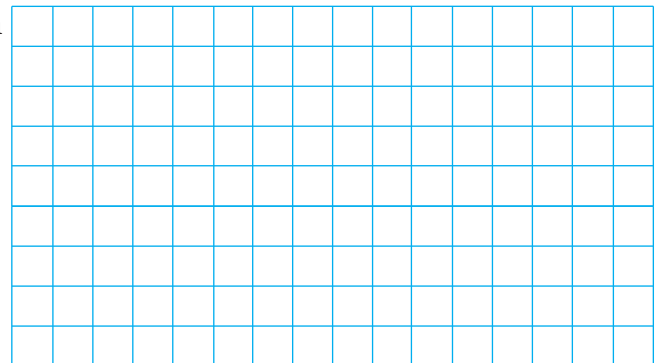
8. 27 tiles in 9 rows

On Your Own

9. Tell how to use an array to find how many rows of 8 are in 40.



10. **MTR** Show two ways you could make an array with tiles for $18 \div 6$. Shade squares on the grid to record the arrays.



Problem Solving · Applications

11. **MTR** Thomas has 28 tomato seedlings to plant in his garden. He wants to plant 4 seedlings in each row. How many rows of tomato seedlings will Thomas plant?



a. What do you need to find? _____

b. What operation could you use to solve the problem? _____

c. Draw an array to find the number of rows of tomato seedlings.

e. Complete the sentences.

Thomas has _____ tomato seedlings.

He wants to plant _____ seedlings in each row.

So, Thomas will plant _____ rows of tomato seedlings.

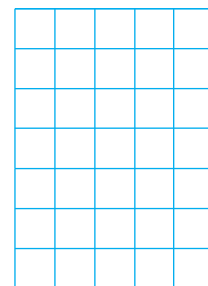
d. What is another way you could have solved the problem?

12. There were 20 plants sold at a store on Saturday, and 30 plants sold at the store on Sunday. Customers bought 5 plants each. How many customers in all bought the plants?

13. Ynez walked her dog 15 times in 5 days. She walked him the same number of times each day. How many times did Ynez walk her dog each day?

Shade squares to make an array to model the problem.

_____ times



Represent Division with Arrays

Go Online

Interactive Examples

Use square tiles to make an array. Solve.

1. How many rows of 4 are in 12?

3 rows

2. How many rows of 3 are in 21?
-

Make an array. Then write a division equation.


3. 20 tiles in 5 rows
-

4. 28 tiles in 7 rows
-

Problem Solving

5. A dressmaker has 24 buttons. He needs 3 buttons to make one dress. How many dresses can he make with 24 buttons?
-

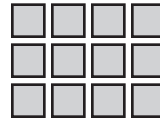
6. Liana buys 36 party favors for her 9 guests. She gives an equal number of favors to each guest. How many party favors does each guest get?
-

7.  Draw an array to show how to arrange 20 chairs into 5 equal rows. Explain what each part of the array represents.
-
-

Lesson Check

8. Mr. Cortez places 24 desks in 6 equal rows. How many desks are in each row?

9. Which division equation is shown by the array?



Spiral Review

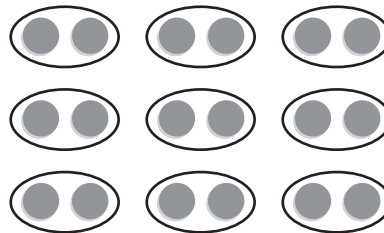
10. Amy has 2 rows of 4 sports trophies on each of her 3 shelves. How many sports trophies does Amy have?

11. What is the unknown factor?

$$9 \times p = 45$$

12. Alonso has 7 stacks with 4 quarters each. How many quarters does Alonso have?

13. Skip count. How many counters are there in all?



Name _____

Relate Multiplication and Division

I Can use related multiplication and division equations to solve problems.



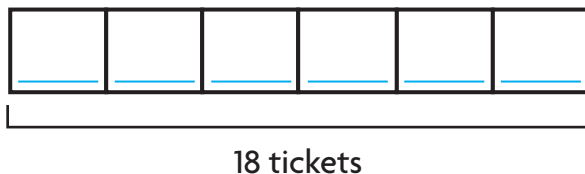
UNLOCK the Problem Real World

Ariana went to the fair. She went on the same ride 6 times and used the same number of tickets each time. She used 18 tickets. How many tickets did she use each time she went on the ride?

One Way Use bar models.

You can use bar models to understand how multiplication and division are related.

Complete the bar model to show 18 tickets divided into 6 equal groups.



Write: $18 \div 6 = \underline{\quad}$

So, Ariana used tickets each time she went on the ride.

Multiplication and division are opposite operations, or **inverse operations**.

You can think about multiplication to solve a division problem.

To solve $18 \div 6 = \square$, think $6 \times \square = 18$.

Since $6 \times 3 = 18$, then $18 \div 6 = 3$.

Florida's B.E.S.T.

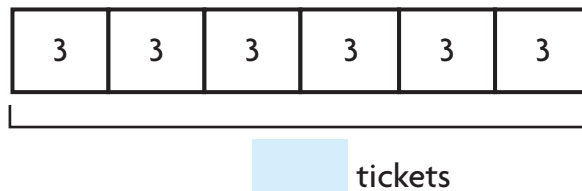
- Algebraic Reasoning 3.AR.2.1, 3.AR.2.2
- Number Sense & Operations 3.NSO.2.2
- Mathematical Thinking & Reasoning
MTR.1.1, MTR.2.1, MTR.4.1, MTR.5.1, MTR.7.1

- What do you need to find?

- Circle the numbers you need to use.

What if the problem said Ariana went on the ride 6 times and used 3 tickets each time? How many tickets did Ariana use in all?

Complete the bar model to show 6 groups of 3 tickets.



Write: $6 \times 3 = \underline{\quad}$



Math Talk

MTR 5.1 Use patterns and structure.

What information is given in each of the bar models?

Another Way Use an array.

You can use an array to see how multiplication and division are related.

Show an array with 18 counters in 3 equal rows by completing the drawing.



There are _____ counters in each row.

Write: $18 \div 3 =$ _____

The same array can be used to find the total number if you know there are 3 rows with 6 counters in each row.

Write: $3 \times 6 =$ _____

Share and Show

Math Board

- Use the array to complete the equation.



Think: There are 3 counters in each row.

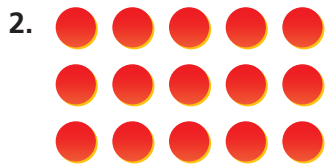
$$6 \div 2 = \underline{\quad}$$

Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

What is another way to find the quotient for $6 \div 2$?

Complete.



$$3 \text{ rows of } \underline{\quad} = 15$$

$$3 \times \underline{\quad} = 15$$

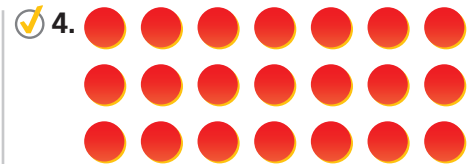
$$15 \div 3 = \underline{\quad}$$



$$2 \text{ rows of } \underline{\quad} = 12$$

$$2 \times \underline{\quad} = 12$$

$$12 \div 2 = \underline{\quad}$$



$$3 \text{ rows of } \underline{\quad} = 21$$

$$3 \times \underline{\quad} = 21$$

$$21 \div 3 = \underline{\quad}$$

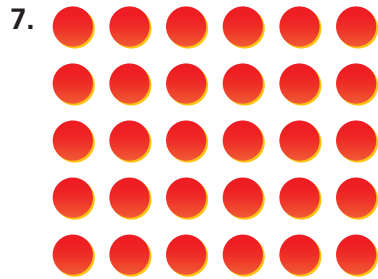
Complete the equations.

5. $5 \times \underline{\quad} = 40$ $40 \div 5 = \underline{\quad}$

6. $6 \times \underline{\quad} = 18$ $18 \div 6 = \underline{\quad}$

On Your Own

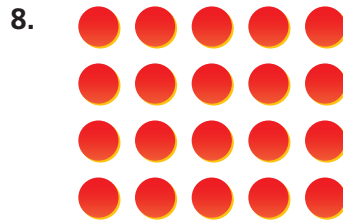
Complete.



$$5 \text{ rows of } \underline{\hspace{1cm}} = 30$$

$$5 \times \underline{\hspace{1cm}} = 30$$

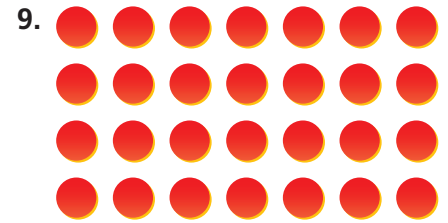
$$30 \div 5 = \underline{\hspace{1cm}}$$



$$4 \text{ rows of } \underline{\hspace{1cm}} = 20$$

$$4 \times \underline{\hspace{1cm}} = 20$$

$$20 \div 4 = \underline{\hspace{1cm}}$$



$$4 \text{ rows of } \underline{\hspace{1cm}} = 28$$

$$4 \times \underline{\hspace{1cm}} = 28$$

$$28 \div 4 = \underline{\hspace{1cm}}$$

Complete the equations.

10. $7 \times \underline{\hspace{1cm}} = 21$

$21 \div 7 = \underline{\hspace{1cm}}$

11. $8 \times \underline{\hspace{1cm}} = 16$

$16 \div 8 = \underline{\hspace{1cm}}$

MTR Complete.

12. $3 \times 3 = 27 \div \underline{\hspace{1cm}}$

13. $16 \div 2 = \underline{\hspace{1cm}} \times 2$

14. $9 = \underline{\hspace{1cm}} \div 4$

15. Tell whether each equation is *true* or *false*.

a. $24 \div 2 = 4 \times 6$ true false

b. $40 \div 5 = 4 \times 2$ true false

c. $3 \times 3 = 72 \div 8$ true false

16. Explain how you know if the equations in problem 15 are true or false.

17. Justin went to the fair when all rides were \$2 each. He spent \$10. How many rides did he go on?

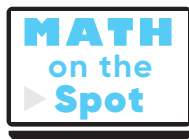
Problem Solving · Applications

Use the table for 18 and 19.

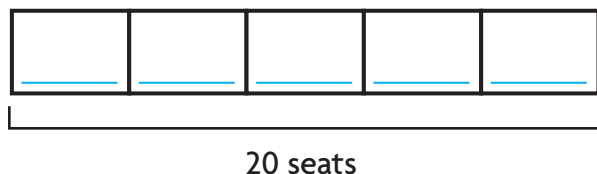
18. Mr. Jerome paid \$24 for some students to get into the fair. How many students did Mr. Jerome pay for?

Ventura County Fair	
Price of admission	
adults	\$6
students	\$3
children 5 and under free	

19. Garrett is 8 years old. He and his family are going to the county fair. What is the price of admission for Garrett, his 2 parents, and his baby sister?



20. **MTR** There are 20 seats on the Wildcat ride. The number of seats in each car is the same. If there are 5 cars on the ride, how many seats are in each car? Complete the bar model to show the problem. Then answer the question.



21. How many days are there in 2 weeks? Write and solve a related word problem to represent the inverse operation.

22. There are 35 prizes in 5 equal rows. How many prizes are in each row?

Complete each equation to represent the problem.

$$5 \times \underline{\quad} = 35 \qquad 35 \div 5 = \underline{\quad}$$

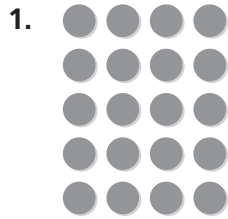
 prizes

Relate Multiplication and Division

Go Online

Interactive Examples

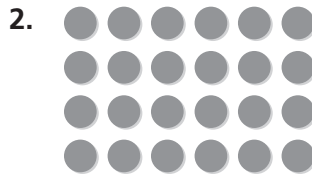
Complete.



$5 \text{ rows of } \underline{4} = 20$

$5 \times \underline{4} = 20$

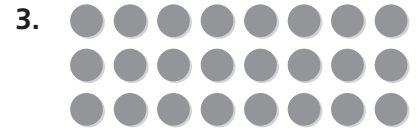
$20 \div 5 = \underline{4}$



$4 \text{ rows of } \underline{\quad} = 24$

$4 \times \underline{\quad} = 24$

$24 \div 4 = \underline{\quad}$



$3 \text{ rows of } \underline{\quad} = 24$

$3 \times \underline{\quad} = 24$

$24 \div 3 = \underline{\quad}$

Complete the equations.

4. $4 \times \underline{\quad} = 28$

$28 \div 4 = \underline{\quad}$

5. $6 \times \underline{\quad} = 36$

$36 \div 6 = \underline{\quad}$


6. $4 \times \underline{\quad} = 36 \div 3$

7. $8 \times \underline{\quad} = 2 \times 20$

Problem Solving

8. Mr. Martin buys 36 muffins for a class breakfast. He places them on plates for his students. If he places 9 muffins on each plate, how many plates does Mr. Martin use?
-
-
- _____

9. Rafael read 18 books during his summer vacation. He read the same number of books each month for 3 months. How many books did he read each month?
-
-
- _____

- 10.
- 
- WRITE**
- 
- Math*
- Use examples to show that multiplication and division are inverse operations.
-
-
- _____
-
-
- _____

Lesson Check

11. What number will complete the equations?

$$6 \times \blacksquare = 24$$

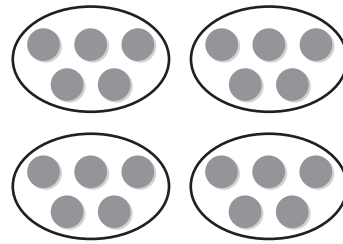
$$24 \div 6 = \blacksquare$$

12. Alice has 14 seashells. She divides them equally between her 2 sisters. How many seashells does each sister get?

Spiral Review

13. Sam and Angel wash 5 cars each hour. They work for 7 hours each day over 2 days. How many cars did Sam and Angel wash?

14. Keisha skip counted to find how many counters in all. How many equal groups are there?



_____ groups of 5

15. Plot 5,710 on the number line.



5,710 is closer to _____ than it is to _____

16. Yany collects 56 shells on a trip to the beach. She lines them up in 7 rows. How many shells are in each row?

Name _____

Write Related Facts

I Can write related multiplication and division facts.

Florida's B.E.S.T.

- **Number Sense & Operations** 3.NSO.2.4, 3.NSO.2.2
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.7.1



UNLOCK the Problem

Related facts are a set of related multiplication and division equations. What related facts can you write for 2, 4, and 8?

Activity

Materials ■ square tiles

STEP 1

Use 8 tiles to make an array with 2 equal rows.

Draw the rest of the tiles.

How many tiles are in each row? _____

Write a division equation for the array using the total number of tiles as the dividend and the number of rows as the divisor.

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

- What model can you use to show how multiplication and division are related?



Write a multiplication equation for the array.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

STEP 2

Now, use 8 tiles to make an array with 4 equal rows.

Draw the rest of the tiles.

How many tiles are in each row? _____

Write a division equation for the array using the total number of tiles as the dividend and the number of rows as the divisor.

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$



Write a multiplication equation for the array.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

So, $8 \div 2 = \underline{\quad}$, $2 \times 4 = \underline{\quad}$, $8 \div 4 = \underline{\quad}$,

and $4 \times 2 = \underline{\quad}$ are related facts.

Try This! Draw an array with 4 rows of 4 tiles.

Your array shows the related facts for 4, 4, and 16.

$4 \times 4 = \underline{\quad}$ $16 \div 4 = \underline{\quad}$

Since both factors are the same, there are only two equations in this set of related facts.



- **MTR** Write another set of related facts that has only two equations.

Remember

$$\begin{array}{ccccccc}
 4 & \times & 4 & = & 16 \\
 \uparrow & & \uparrow & & \uparrow \\
 \text{factor} & & \text{factor} & & \text{product}
 \end{array}$$

Share and Show



MTR 4.1 Engage in discussions on mathematical thinking.

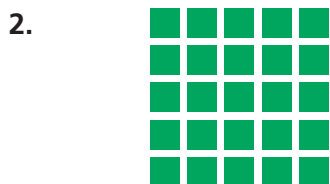
Look at the multiplication and division equations in a set of related facts. What do you notice about the products and dividends? Explain.

- Complete the related facts for this array.

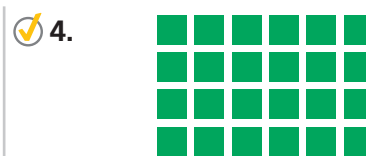


$2 \times 8 = 16$ $16 \div 2 = 8$

Write the related facts for the array.





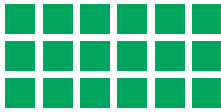


- Why do the related facts for the array in Problem 2 have only two equations?

On Your Own

Write the related facts for the array.

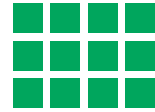
6.



7.



8.



Write the related facts for the set of numbers.

9. 2, 5, 10

10. 3, 8, 24

11. 6, 6, 36

Complete the related facts.

12. $4 \times 7 = \underline{\quad}$

$7 \times \underline{\quad} = 28$

$28 \div \underline{\quad} = 4$

$28 \div 4 = \underline{\quad}$

13. $5 \times \underline{\quad} = 30$

$6 \times \underline{\quad} = 30$

$30 \div 6 = \underline{\quad}$

$30 \div 5 = \underline{\quad}$

14. $\underline{\quad} \times 9 = 27$

$\underline{\quad} \times 3 = 27$

$\underline{\quad} \div 9 = 3$

$27 \div \underline{\quad} = 9$

15. Write a set of related facts that has only two equations. Draw an array to show the facts.

16. Maria has an array with 4 rows of 5 tiles. She wants an array that shows the related facts for 5, 5, and 25. What can she do to change her array?

Problem Solving · Applications



Use the table for problems 17 and 18.

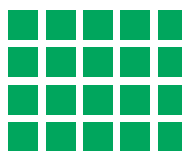
17. **MTR** Ty has a package of glitter dough. He says he can give each of 9 friends 5 equal sections. Describe his error.

18. Mr. Lee divides 1 package of clay and 1 package of glitter dough equally among 4 students. How many more glitter dough sections than clay sections does each student get?

19. Ms. Perez divides 21 markers equally among 7 students. Write an equation to show how many markers each student gets. Then write a related fact.

20. Select the equations that the array represents. Mark all that apply.

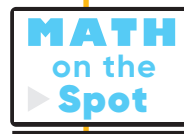
- A** $2 \times 10 = 20$ **D** $20 \div 2 = 10$
 B $20 \div 4 = 5$ **E** $4 \times 5 = 20$
 C $5 \times 4 = 20$ **F** $20 \div 5 = 4$



Clay Supplies	
Item	Number in package
clay	12 sections
clay tool set	11 tools
glitter dough	36 sections

Show the Math

Demonstrate Your Thinking

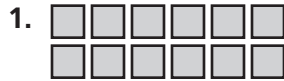


Write Related Facts

Go Online

Interactive Examples

Write the related facts for the array.

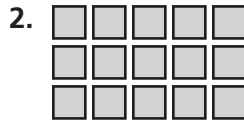


$2 \times 6 = 12$

$6 \times 2 = 12$

$12 \div 2 = 6$

$12 \div 6 = 2$





Write the related facts for the set of numbers.

4. 3, 7, 21

_____5. 2, 9, 18

_____6. 4, 8, 32

Problem Solving

7. T-shirts are on sale for \$5 each. Jamela has \$45 and wants to buy as many as she can. How many T-shirts can Jamela buy?

_____8. Mr. Moore has 21 feet of wallpaper. He cuts it into sections that are each 3 feet long. How many sections does Mr. Moore have?
_____9.  *Math* Write a division fact. Write the rest of the related facts.

Lesson Check

10. What number completes the set of related facts?

$5 \times \blacksquare = 40$

$40 \div \blacksquare = 5$

$\blacksquare \times 5 = 40$

$40 \div 5 = \blacksquare$

11. Write the related facts for the set of numbers.

4, 7, 28

Spiral Review

12. Beth runs 20 miles each week for 8 weeks. How many miles does Beth run in 8 weeks?

13. Find the product.

5×0

14. Uri's bookcase has 5 shelves. There are 9 books on each shelf. How many books are in Uri's bookcase?

15. There are 6 batteries in one package. How many batteries will 6 packages have?

Name _____

Apply Division Rules for 1 and 0

I Can use properties to apply rules for division with 1 and 0.

Florida's B.E.S.T.

- Number Sense & Operations 3.NSO.2.4, 3.NSO.2.2
- Mathematical Thinking & Reasoning MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.7.1



UNLOCK the Problem Real World

What rules for division can help you divide with 1 and 0?

If there is only 1 fishbowl, then all the fish must go in that fishbowl.



$$\begin{array}{ccccccc}
 4 & \div & 1 & = & 4 \\
 \uparrow & & \uparrow & & \uparrow \\
 \text{number} & & \text{number} & & \text{number} \\
 \text{of fish} & & \text{of bowls} & & \text{in} \\
 & & & & \text{each bowl}
 \end{array}$$

Try This! There are 3 fish and 1 fishbowl. Draw a quick picture to show the fish in the fishbowl.

Write the equation your picture shows.

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

Rule A: Any number divided by 1 equals that number.

Math Talk

MTR 5.1 Use patterns and structure.

Explain how Rule A is related to the Identity Property of Multiplication.

If there is the same number of fish and fishbowls, then 1 fish goes in each fishbowl.



$$\begin{array}{ccccccc}
 4 & \div & 4 & = & 1 \\
 \uparrow & & \uparrow & & \uparrow \\
 \text{number} & & \text{number} & & \text{number} \\
 \text{of fish} & & \text{of bowls} & & \text{in} \\
 & & & & \text{each bowl}
 \end{array}$$

Try This! There are 3 fish and 3 fishbowls. Draw a quick picture to show the fish divided equally among the fishbowls.

Write the equation your picture shows.

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

Rule B: Any number (except 0) divided by itself equals 1.

If there are 0 fish and 4 fishbowls, there will not be any fish in the fishbowls.



$$0 \div 4 = 0$$

↑ ↑ ↑

number of fish number of bowls number in each bowl

Try This! There are 0 fish and 3 fishbowls. Draw a quick picture to show the fishbowls.

Write the equation your picture shows.

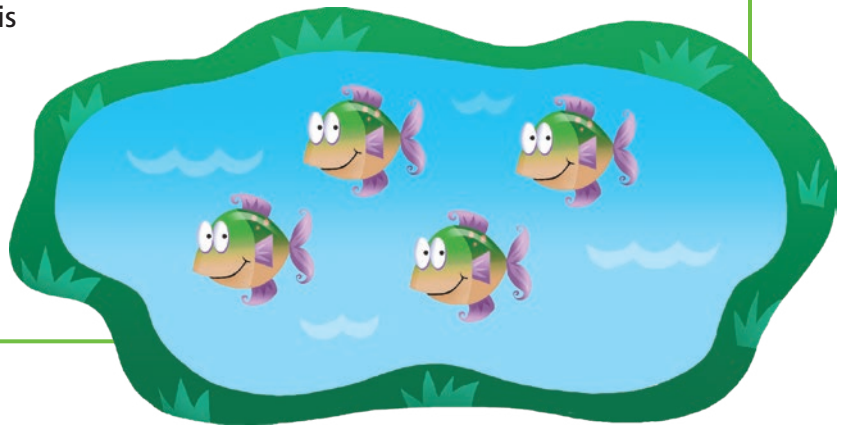
_____ ÷ _____ = _____

Rule C: Zero divided by any number (except 0) equals 0.

If there are 0 fishbowls, then you cannot separate the fish equally into fishbowls. Dividing by 0 is not possible.

~~$4 \div 0 =$~~

Rule D: You cannot divide by 0.



Share and Show

Math Board

1. Use the picture to find $2 \div 2$. _____



Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

What happens when you divide a number (except 0) by itself?

Find the quotient.

2. $7 \div 1 =$ _____

3. $8 \div 8 =$ _____

✓ 4. $0 \div 5 =$ _____

✓ 5. _____ $= 6 \div 6$

On Your Own


Find the quotient.


6. $0 \div 8 = \underline{\quad}$

7. $5 \div 5 = \underline{\quad}$


8. $2 \div 1 = \underline{\quad}$

9. $0 \div 7 = \underline{\quad}$


 10. $5 \overline{)0}$


 11. $1 \overline{)9}$


 12. $7 \overline{)7}$


 13. $10 \overline{)10}$

Find the quotient.

14. $6 \div 1$

15. $25 \div 5$

16. $0 \div 6$

17. $18 \div 3$

18. $14 \div 2$

19. $9 \div 9$

20. $28 \div 4$

21. $8 \div 1$

22. $3 \overline{)27}$

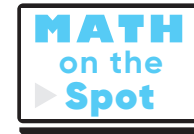
23. $5 \overline{)10}$

24. $3 \overline{)0}$

25. $1 \overline{)0}$

Problem Solving · Applications

26. Claire has 7 parakeets. She puts 4 of them in a cage. She divides the other parakeets equally among 3 friends to hold. How many parakeets does each friend get to hold?



27. Tatiana has 5 parrots. She gives each parrot 1 grape in the morning and 1 grape in the evening. How many grapes does she give to her parrots each day?

28. **MTR** Suppose a pet store has 21 birds that are in 21 cages. Use what you know about division rules to find the number of birds in each cage. Explain your answer.

29. For numbers 29a–29c, select True or False for each equation.

29a. $4 \div 4 = 1$ True False

29b. $6 \div 1 = 1$ True False

29c. $1 \div 5 = 1$ True False

Connect to Reading

Compare and Contrast

You have learned the rules for division with 1. Compare and contrast them to help you learn how to use the rules to solve problems.



Compare the rules. Think about how they are *alike*.

Contrast the rules. Think about how they are *different*.

Read: Rule A: Any number divided by 1 equals that number.
Rule B: Any number (except 0) divided by itself equals 1.

Compare: How are the rules alike?
• Both are division rules for 1.

Contrast: How are the rules different?
• Rule A is about dividing a number by 1. The quotient is that number.
• Rule B is about dividing a number (except 0) by itself. The quotient is always 1.

Read the problem. Write an equation. Solve.

Write *Rule A* or *Rule B* to tell which rule you used.

30. Jakari bought 7 goldfish at the pet store. He put them in 1 fishbowl. How many goldfish did he put in the fishbowl?

31. Vashti has 6 turtles. She divides them equally among 6 aquariums. How many turtles does she put in each aquarium?

Apply Division Rules for 1 and 0

Go Online

Interactive Examples

Find the quotient.

1. $3 \div 1 = \underline{3}$

2. $8 \div 8 = \underline{\quad}$

3. $\underline{\quad} = 0 \div 6$

4. $2 \div 2 = \underline{\quad}$

5. $\underline{\quad} = 9 \div 1$

6. $0 \div 2 = \underline{\quad}$

7. $0 \div 3 = \underline{\quad}$

8. $\underline{\quad} = 0 \div 4$

9. $7 \overline{)7}$

10. $1 \overline{)6}$

11. $9 \overline{)0}$

12. $1 \overline{)5}$

13. $1 \overline{)0}$

14. $4 \overline{)4}$

15. $1 \overline{)10}$

16. $2 \overline{)2}$

Problem Solving

17. There are no horses in the stables. There are 3 stables in all. How many horses are in each stable?

18. Jon has 6 kites. He and his friends will each fly 1 kite. How many people in all will fly a kite?

19.  *Math* Compare and contrast the multiplication rules for 1 and 0 with the division rules for 1 and 0.

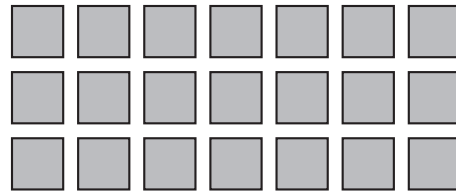
Lesson Check

20. Marisa has 6 pairs of jeans. She places each pair on its own hanger. How many hangers does Marisa use?
21. There are 0 birds and 4 bird cages. What division equation describes how many birds are in each cage?

Spiral Review

22. There are 7 plates on the table. There are 0 sandwiches on each plate. How many sandwiches are on the plates?
23. Write one way to break apart the array to find the product.

$$7 \times 0$$



24. Describe a pattern in the table.

Vans	1	2	3	4	5
Students	6	12	18	24	30

25. Sam collected 18 cans of vegetables for a canned food drive. He divided them into 2 boxes. How many cans went in each box?

Name _____

Chapter Review

1. For Problems 1a–1d, select True or False for each equation.

1a. $3 \div 1 = 1$ True False

1b. $0 \div 4 = 0$ True False

1c. $7 \div 7 = 1$ True False

1d. $6 \div 1 = 6$ True False

2. Elizabeth has 12 horses on her farm. She puts an equal number of horses in each of 3 pens. How many horses are in each pen?

Circle a number that makes the sentence true.

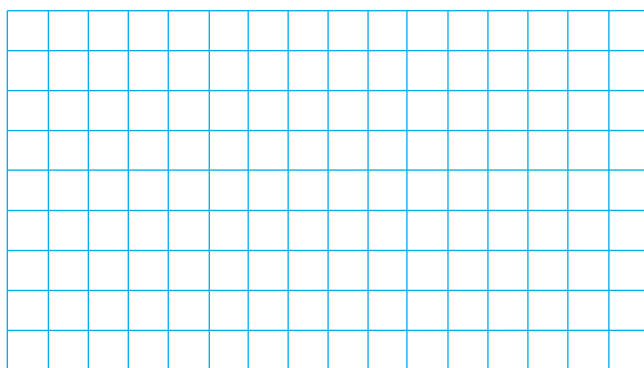
There are

4
9
36

 horses in each pen.

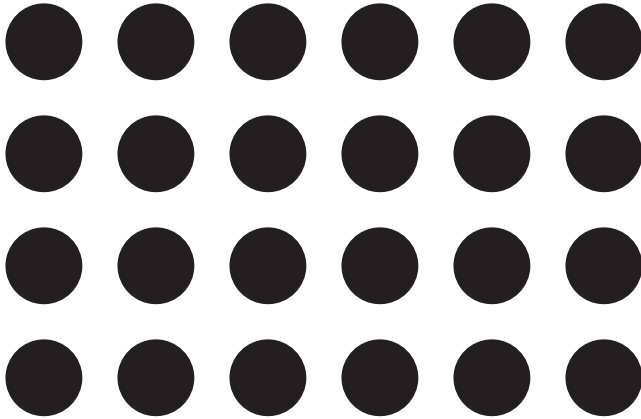
3. Kristof plants 25 pumpkins seeds in 5 equal rows. How many seeds does Kristof plant in each row?

Make an array to represent the problem. Then solve the problem.



_____ seeds

4. Beatrix spent 24 minutes walking around a track. It took her 3 minutes to walk each time around the track. How many times did Beatrix walk around the track?



Make equal groups to model the problem. Then explain how you solved the problem.

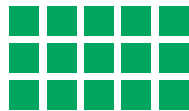
5. There are 7 cars in an amusement park ride. There are 42 people in the cars. An equal number of people ride in each car. How many people ride in one car?



42 people

_____ people

6. Select the equations that the array represents. Mark all that apply.



- | | |
|--|--|
| <input type="radio"/> A $3 \times 5 = \blacksquare$ | <input type="radio"/> D $5 \times \blacksquare = 15$ |
| <input type="radio"/> B $2 \times \blacksquare = 12$ | <input type="radio"/> E $12 \div 3 = \blacksquare$ |
| <input type="radio"/> C $\blacksquare \div 3 = 5$ | <input type="radio"/> F $15 \div 5 = \blacksquare$ |

Name _____

7. Eduardo visited his cousin for 28 days over the summer. There are 7 days in each week. How long, in weeks, was Eduardo's visit?

Part A

Draw jumps on the number line to model the problem.



Part B

Write a division equation to represent the model.

_____ weeks

8. A workbook is 64 pages long. If each chapter is 8 pages long, how many chapters are there?

_____ chapters

9. There are 56 apples packed in 7 baskets with the same number of apples in each basket. How many apples are in each basket?

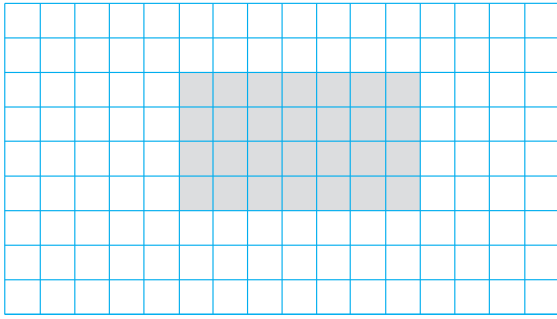
For Problems 9a–9d, choose Yes or No to tell whether the equation represents the problem.

- 9a. $56 + 7 = \blacksquare$ Yes No
9b. $7 \times \blacksquare = 56$ Yes No
9c. $56 \div \blacksquare = 7$ Yes No
9d. $56 - \blacksquare = 7$ Yes No

10. Stefan has 24 photos to display on some posters. Select a way that he could display all of the photos in equal groups on the posters. Mark all that apply.

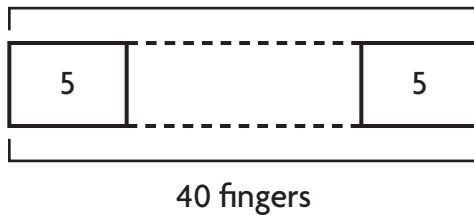
- A** 6 photos on each of 4 posters **D** 5 photos on each of 5 posters
 B 7 photos on each of 3 posters **E** 3 photos on each of 8 posters
 C 4 photos on each of 6 posters **F** 7 photos on each of 4 posters

11. Debbie made this array to model a division equation. Which equation could Debbie have modeled? Mark all that apply.



- (A) $14 \div 7 = 2$ (C) $28 \div 7 = 4$
 (B) $28 \div 4 = 7$ (D) $14 \div 2 = 7$

12. Mrs. Edwards knitted some gloves. Each glove had 5 fingers. She knitted a total of 40 fingers. How many gloves did Mrs. Edwards knit?



_____ gloves

13. Select a number to complete each equation.



$7 \div 7 =$ _____ $7 \div 1 =$ _____ $0 \div 7 =$ _____

14. The coach separated the 18 players at lacrosse practice into 3 equal groups. How many players were in each group?

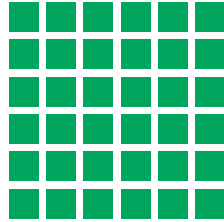
_____ players

Name _____

15. Write a division equation to represent the repeated subtraction.

$$\begin{array}{r} 32 \\ - 8 \\ \hline 24 \end{array} \quad \begin{array}{r} 24 \\ - 8 \\ \hline 16 \end{array} \quad \begin{array}{r} 16 \\ - 8 \\ \hline 8 \end{array} \quad \begin{array}{r} 8 \\ - 8 \\ \hline 0 \end{array}$$

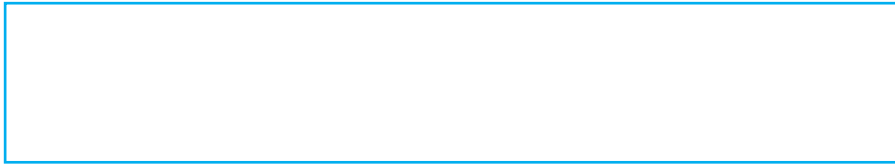
16. Write related facts for the array. Explain why there are not more related facts.



17. Darius bakes 18 muffins for his friends. He gives each of his friends an equal number of muffins and has none left over.

Part A

Draw a picture to show how many friends Darius gave muffins to.



Darius gave muffins to _____

_____ friends.

Part B

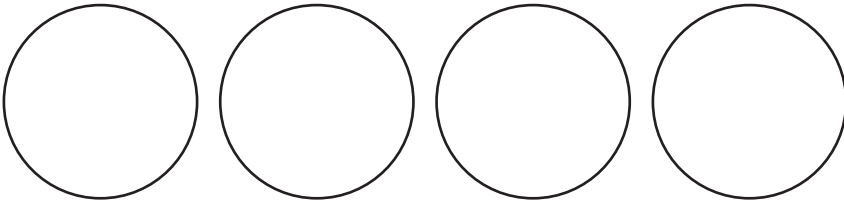
Could Darius have given 4 of his friends an equal number of muffins and have none left over? Explain why or why not.

18. Draw an array to the right showing 4 rows with 5 counters in each row. Write one multiplication equation shown by the array. Then write one division equation shown by the array.

19. Use the numbers to write related multiplication and division facts.



20. Tyrone took 16 pennies from his bank and put them in 4 equal stacks. How many pennies did Tyrone put in each stack? Show your work.



_____ pennies

21. Can you say how many zeros there are in 25? Explain why or why not by stating a fact about 0 and division.

22. Decide whether each equation is *true* or *false*.

$28 \div 7 = 2 \times 3$ true false

$4 \times 2 = 48 \div 6$ true false