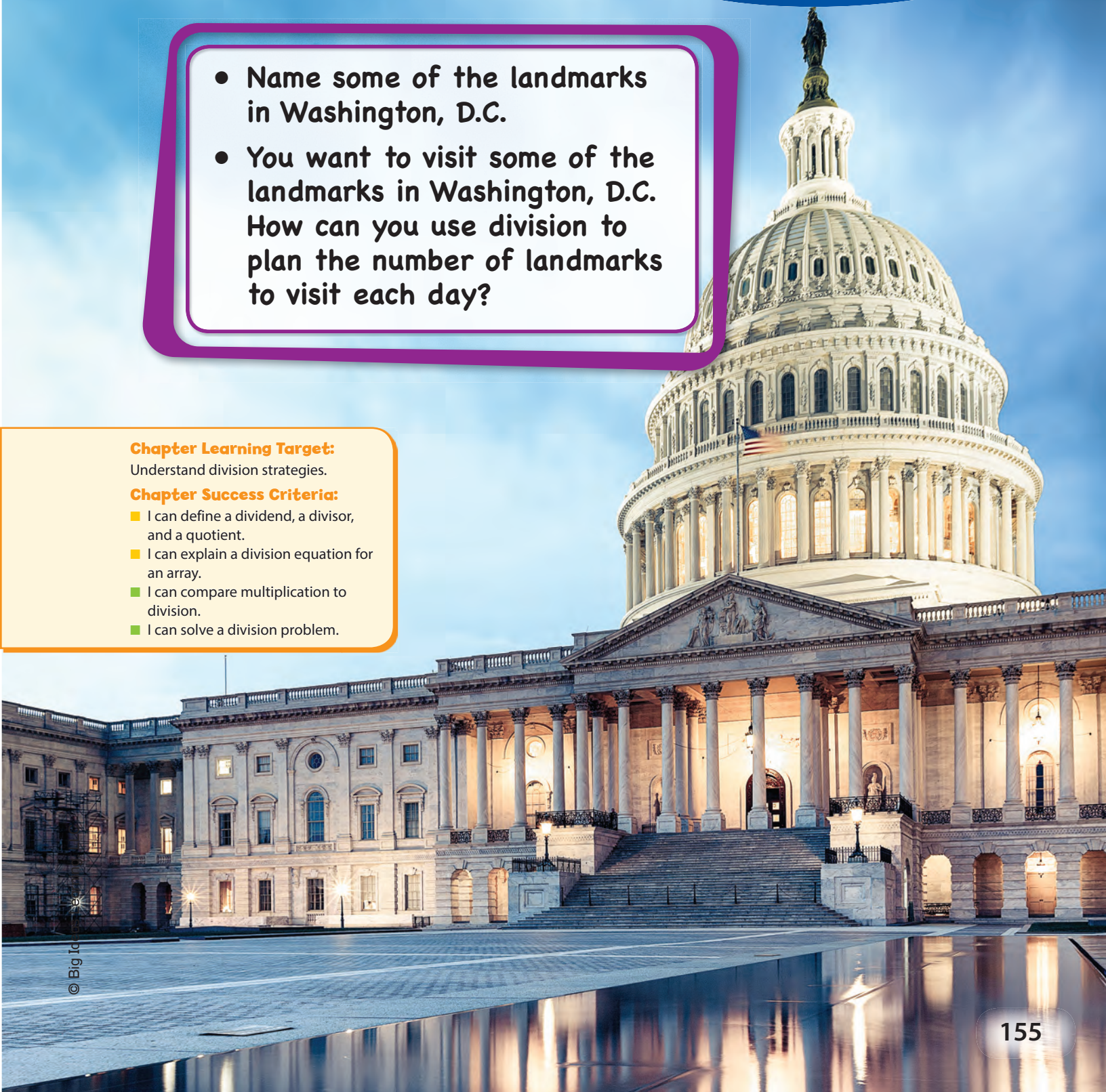
4 Division Facts and Strategies

- Name some of the landmarks in Washington, D.C.
- You want to visit some of the landmarks in Washington, D.C. How can you use division to plan the number of landmarks to visit each day?

Chapter Learning Target:
Understand division strategies.

Chapter Success Criteria:
- I can define a dividend, a divisor, and a quotient.
- I can explain a division equation for an array.
- I can compare multiplication to division.
- I can solve a division problem.



Name _____

4 Vocabulary

Review Words

Commutative Property of Multiplication
Distributive Property
Multiplication Property of One
Multiplication Property of Zero

Organize It

Use the review words to complete the graphic organizer.

Properties of Multiplication

_____	_____
$4 \times 3 = 12$ $\quad 3 \times 4 = 12$ So, $4 \times 3 = 3 \times 4$.	$3 \times (5 + 2) = (3 \times 5) + (3 \times 2)$
_____	_____
$5 \times 0 = 0$ $\quad 0 \times 2 = 0$	$10 \times 1 = 10$ $\quad 1 \times 7 = 7$

Define It

Use your vocabulary cards to complete the puzzle.

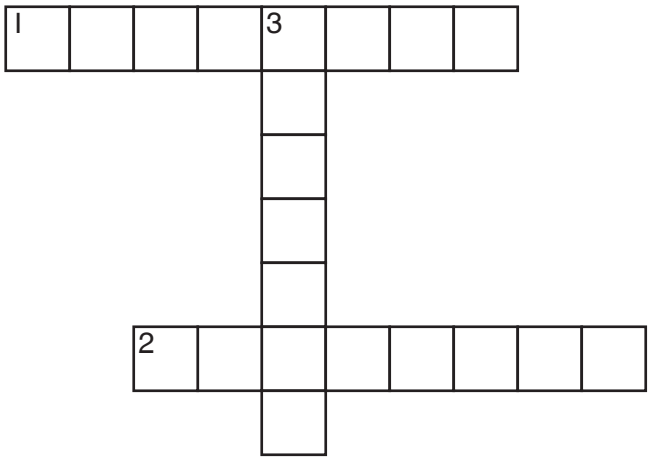
Across

1. The number of objects or the amount you want to divide

2. The answer when you divide one number by another number

Down

3. The number by which you divide



Chapter 4 Vocabulary Cards

dividend	divisor
fact family	quotient

The number by which you divide

$10 \div 2 = 5$

The number of objects or the amount you want to divide

$10 \div 2 = 5$

The answer when you divide one number by another number

$10 \div 2 = 5$

A group of related facts that uses the same numbers

$3 \times 2 = 6$

$2 \times 3 = 6$

$6 \div 3 = 2$

$6 \div 2 = 3$

Name _____

Use Arrays to Divide 4.1

Learning Target: Use an array to divide.

Success Criteria:

- I can draw an array to model division.
- I can identify a dividend, a divisor, and a quotient.
- I can write a division equation for an array.

Explore and Grow

Build an array to model 12. Draw the array.

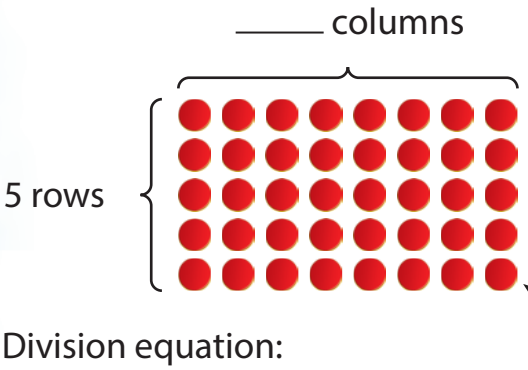
Number of rows: _____

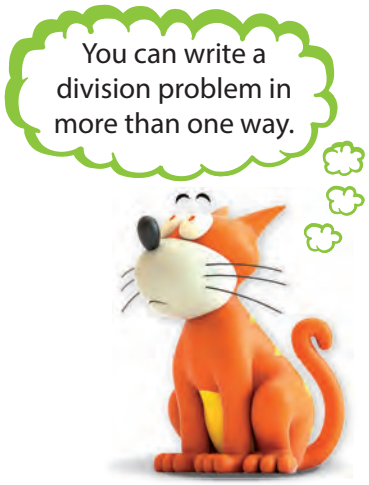
Number in each row: _____

MP **Structure** Compare your array with your partner's array. How are they the same? How are they different?

Think and Grow: Division and Arrays

Example There are 40 counters. The counters are in 5 equal rows. How many counters are in each row?





Division equation:

40 ÷ 5 = _____

dividend **divisor** **quotient**

□ ← quotient

divisor → 5)40

dividend

There are _____ counters in each row.

Show and Grow

Find the quotient.

1. 

14 ÷ 2 = _____

2. 

12 ÷ 3 = _____

3. There are 20 counters. The counters are in 4 equal rows. How many counters are in each row?

4 rows of _____

20 ÷ 4 = _____

4. You have 21 counters. You arrange them with 7 counters in each row. How many rows of counters do you make?

_____ rows of 7

21 ÷ 7 = _____

Name _____

Apply and Grow: Practice

5. There are 25 counters. The counters are in 5 equal rows. How many counters are in each row?

5 rows of _____

25 ÷ 5 = _____

6. There are 48 counters. The counters are in 8 equal rows. How many counters are in each row?

8 rows of _____

48 ÷ 8 = _____

7. You have 42 counters. You arrange them with 6 counters in each row. How many rows of counters do you make?

_____ rows of 6

42 ÷ 6 = _____

8. You have 27 counters. You arrange them with 9 counters in each row. How many rows of counters do you make?

_____ rows of 9

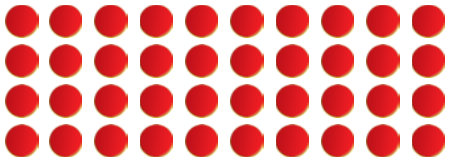
27 ÷ 9 = _____

Write a division equation for the array.

9.

_____ ÷ _____ = _____

10.



_____ ÷ _____ = _____

11. **YOU BE THE TEACHER** Your friend has 63 counters in 7 equal rows. Your friend says that finding 7 ÷ 63 will give the number of columns. Is your friend correct? Explain.

Think and Grow: Modeling Real Life

Two groups of students are playing a flip and find game. Your group arranges 48 cards in 8 equal rows. The other group arranges 28 cards in 4 equal rows. Which group has rows with more cards?

Draw:

Division equations:

_____ has rows with more cards.

Show and Grow

12. Newton arranges 12 magnets in 6 equal rows. Descartes arranges 15 magnets in 3 equal rows. Who has rows with more magnets?

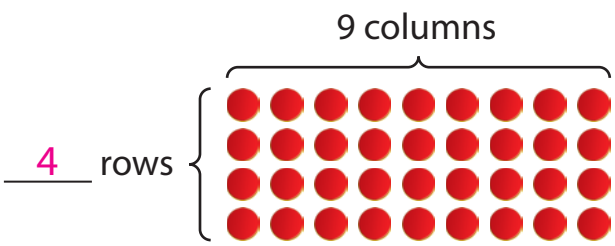
13. You have 18 jars of green slime and 12 jars of purple slime at a party. Each guest takes 3 jars. There are none left. How many guests are at the party?

Name _____

Homework & Practice 4.1

Learning Target: Use an array to divide.

Example There are 36 counters. There are 9 counters in each row. How many rows are there?



$9\overline{)36}$ $\quad 4$

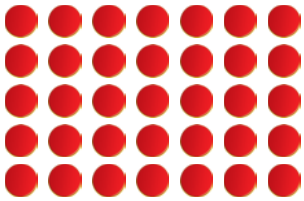
$36 \div 9 = 4$

There are 4 rows.

Find the quotient.

1. 

$10 \div 2 =$ _____

2. 

$35 \div 5 =$ _____

3. There are 9 counters. The counters are in 3 equal rows. How many counters are in each row?

3 rows of _____

$9 \div 3 =$ _____

4. There are 60 counters. The counters are in 6 equal rows. How many counters are in each row?

6 rows of _____

$60 \div 6 =$ _____

5. You have 72 counters. You arrange them with 8 counters in each row. How many rows of counters do you make?

_____ rows of 8

$72 \div 8 =$ _____

6. You have 24 counters. You arrange them with 6 counters in each row. How many rows of counters do you make?

_____ rows of 6

$24 \div 6 =$ _____

7. **Writing** How can you use an array to find 35 ÷ 7?

8. **Precision** Label the parts of the division problem using *quotient*, *dividend*, and *divisor*.

$12 \div 6 = 2$ ← _____

_____ ↑ ↑ _____

$6\overline{)12}$ ← 2 ← _____

_____ ↑ ↑ _____

9. **Modeling Real Life** Your apartment building has 40 mailboxes in 5 equal rows. Your friend's apartment building has 40 mailboxes in 4 equal rows. Which apartment building has rows with more mailboxes?

10. **Modeling Real Life** There are 8 snack bags of pretzels and 10 snack bags of popcorn. The bags are divided equally between 9 friends. How many snack bags does each friend get?

Review & Refresh

Find the missing factor.

11. _____ × 2 = 20	**12.** 1 × _____ = 5	**13.** _____ × 6 = 0
14. 1 × _____ = 0	**15.** _____ × 4 = 40	**16.** 7 × _____ = 7

Name _____

Relate Multiplication and Division

4.2

Learning Target: Use fact families to relate multiplication and division.

Success Criteria:

- I can use an array to write related multiplication and division equations.
- I can explain the relationship between multiplication and division.

Explore and Grow

Use 24 counters to make an array. Draw the array. Write a multiplication equation and a division equation for the array.

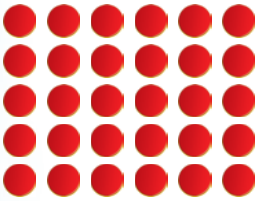
_____ × _____ = _____ _____ ÷ _____ = _____

MP **Structure** Compare your equations to your partner's equations. How are they the same? How are they different?

Think and Grow: Multiplication and Division

A **fact family** is a group of related facts that uses the same numbers.

Example



Multiplication	Division
5 rows of 6 counters	30 counters in 5 equal rows
$5 \times 6 =$ _____	$30 \div 5 =$ _____
_____ counters	_____ counters in each row

Fact family for 5, 6, and 30:

$5 \times 6 =$ _____ $30 \div 5 =$ _____

$6 \times 5 =$ _____ $30 \div 6 =$ _____

Show and Grow

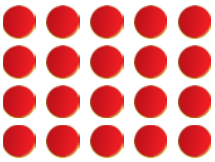
Use the array to complete the equations.

1.

$3 \times$ _____ $= 24$

$24 \div 3 =$ _____

2.



$4 \times$ _____ $= 20$

$20 \div 4 =$ _____

3. Draw an array to find 2×7. Write the other 3 facts in the fact family.

$2 \times 7 =$ _____

_____

_____

_____

Name _____

Apply and Grow: Practice

4. Draw an array to find 3×6. Write the other 3 facts in the fact family.

$3 \times 6 =$ _____

_____

_____

_____

Complete the fact family.

5. $7 \times$ _____ $= 70$ $\quad 70 \div 10 =$ _____

_____ $\times 7 = 70$ $\quad 70 \div$ _____ $= 10$

6. $5 \times$ _____ $= 40$ $\quad 40 \div 8 =$ _____

_____ $\times 5 = 40$ $\quad 40 \div$ _____ $= 8$

Write the fact family for the numbers.

7. 2, 5, 10

8. 4, 3, 12

9. MP **Structure** Find each product. Then match the multiplication fact with the related division fact.

$6 \times 4 =$ _____ $\quad 27 \div 3 = 9$

$8 \times 2 =$ _____ $\quad 7 \div 1 = 7$

$3 \times 9 =$ _____ $\quad 16 \div 2 = 8$

$7 \times 1 =$ _____ $\quad 24 \div 6 = 4$

10. DIG DEEPER! Is $4 \times 6 = 24$ part of the fact family for $3 \times 8 = 24$? Explain.

Think and Grow: Modeling Real Life

Your teacher divides the items shown equally among 9 students. Write two equations that you can use to show how many straws each student gets.

Item	Number
Toothpicks	72
Containers of clay	27
Straws	54

Division equation:

Multiplication equation:

Show and Grow

11. Use the table above to write two equations that you can use to show how many containers of clay each student gets.

12. Use the table above to find how many more toothpicks students will get than straws.

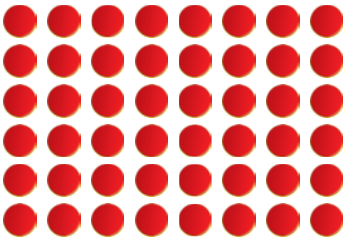
13. Explain how a multiplication fact can help you solve $30 \div 3 = \_\_\_\_$.

Name _____

Homework & Practice 4.2

Learning Target: Use fact families to relate multiplication and division.

Example



Multiplication

6 rows of 8 counters

$6 \times 8 =$ 48

48 counters

Division

48 counters in 6 equal rows

$48 \div 6 =$ 8

8 counters in each row

Fact family for 6, 8, and 48:

$6 \times 8 =$ 48 $\quad 48 \div 6 =$ 8

$8 \times 6 =$ 48 $\quad 48 \div 8 =$ 6

Use the array to complete the equations.

1.

$2 \times$ _____ $= 8$

$8 \div 2 =$ _____

2.

$3 \times$ _____ $= 9$

$9 \div 3 =$ _____

3. Draw an array to find 5×7. Write the other 3 facts in the fact family.

$5 \times 7 =$ _____

Complete the fact family.

4. $9 \times$ _____ $= 9$ $\quad 9 \div 1 =$ _____

_____ $\times 9 = 9$ $\quad 9 \div$ _____ $= 1$

5. $6 \times$ _____ $= 42$ $\quad 42 \div 7 =$ _____

_____ $\times 6 = 42$ $\quad 42 \div$ _____ $= 7$

Write the fact family for the numbers.

6. 4, 8, 32

7. 6, 7, 42

8. **Which One Doesn't Belong?** Which equation does not belong with the other three?

$3 \times 7 = 21$ $7 \times 3 = 21$ $21 \div 7 = 3$ $7 + 3 = 10$

9. DIG DEEPER! Newton has 16 pennies. He wants to put them in stacks that are the same height. How many stacks does he make?

10. **Modeling Real Life** Your art teacher divides the items shown equally among 6 students. Write two equations that you can use to show how many pieces of paper each student gets.

Item	Number
Paintbrushes	48
Pieces of paper	42
Paint trays	18

11. **Modeling Real Life** Use the table above to find how many more paintbrushes students will get than paint trays.

Review & Refresh

Find the missing factor.

12. $5 \times \_\_\_\_ = 45$

13. $2 \times \_\_\_\_ = 16$

14. $\_\_\_\_ \times 2 = 4$

15. $\_\_\_\_ \times 3 = 15$

16. $5 \times \_\_\_\_ = 10$

17. $5 \times \_\_\_\_ = 5$

Name _____

Divide by 2, 5, or 10

4.3

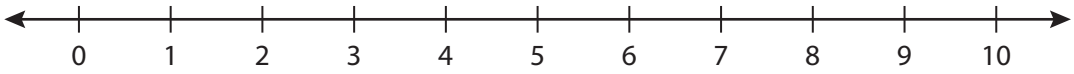
Learning Target: Divide a number by 2, 5, or 10.

Success Criteria:

- I can model dividing by 2, 5, or 10.
- I can find the quotient of a number and 2, 5, or 10.

Explore and Grow

Use the number line to model 10 ÷ 2.

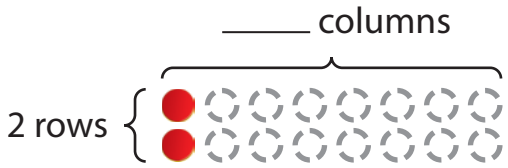


10 ÷ 2 = _____

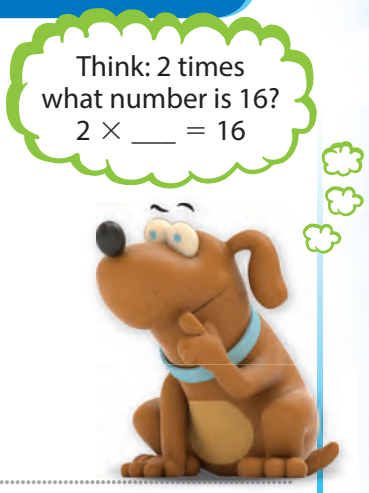
MP **Structure** In your number line model, does 2 represent the number of equal groups or the size of the groups? Explain.

Think and Grow: Divide by 2, 5, or 10

Example Find 16 ÷ 2.



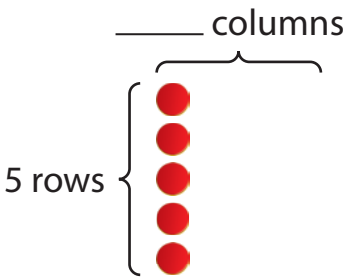
16 ÷ 2 = _____ or $2\overline{)16}$



Example Find 20 ÷ 5.

Think: 5 times what number is 20?

5 × _____ = 20

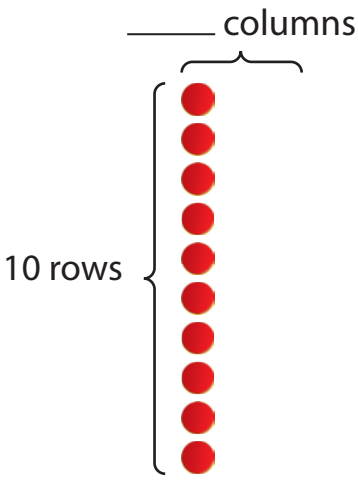


20 ÷ 5 = _____ or $5\overline{)20}$

Example Find 30 ÷ 10.

Think: 10 times what number is 30?

10 × _____ = 30



30 ÷ 10 = _____ or $10\overline{)30}$

Show and Grow

Write the related multiplication fact. Then find the quotient.

1. Find 60 ÷ 10.

10 × _____ = 60

60 ÷ 10 = _____

2. Find 14 ÷ 2.

2 × _____ = 14

14 ÷ 2 = _____

3. Find 35 ÷ 5.

5 × _____ = 35

35 ÷ 5 = _____

Name _____

Apply and Grow: Practice

Write the related multiplication fact. Then find the quotient.

4. Find $4 \div 2$.

$2 \times \_\_\_\_ = 4$

$4 \div 2 = \_\_\_\_$

5. Find $15 \div 5$.

$5 \times \_\_\_\_ = 15$

$15 \div 5 = \_\_\_\_$

6. Find $10 \div 10$.

$10 \times \_\_\_\_ = 10$

$10 \div 10 = \_\_\_\_$

Find the quotient.

7. $70 \div 10 = \_\_\_\_$

8. $25 \div 5 = \_\_\_\_$

9. $18 \div 2 = \_\_\_\_$

10. $\square \div 5 = 30$

11. $\square \div 2 = 16$

12. $\square \div 10 = 90$

13. Divide 60 by 10.

14. Divide 14 by 2.

15. Divide 45 by 5.

Find the missing divisor.

16. $12 \div \_\_\_\_ = 6$

17. $10 \div \_\_\_\_ = 2$

18. $50 \div \_\_\_\_ = 5$

19. You make 2 batches of pancakes. You use 6 cups of flour. How many cups of flour are in 1 batch?

20. DIG DEEPER! I am an even number. If you multiply me by 5, then divide the product by 10, the quotient is 2. What number am I?

Think and Grow: Modeling Real Life

Fourteen students say a dog is their favorite pet. How many symbols should you draw to complete the picture graph?

Division equation:

Favorite Pet	
Dog	
Cat	☺ ☺ ☺ ☺ ☺
Fish	☺ ☺ ☺ ☺

Each ☺ = 2 students.

You should draw _____ symbols.

Show and Grow

21. Twenty-five students say riding a bike is their favorite summer activity. How many symbols should you draw to complete the picture graph?

Favorite Summer Activity	
Swimming	☺ ☺
Riding a bike	
Playing sports	☺ ☺ ☺

Each ☺ = 5 students.

22. Erasers cost 10¢ each. How many erasers can you buy with 70¢?

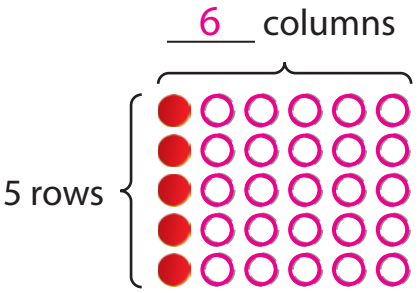
23. You have 26 red linking cubes and 24 blue linking cubes. You use all of the linking cubes to make towers with 10 linking cubes each. How many towers do you make?

Name _____

Homework & Practice 4.3

Learning Target: Divide a number by 2, 5, or 10.

Example Find 30 ÷ 5.



30 ÷ 5 = 6 or $5\overline{)30}$ with 6 above

Write the related multiplication fact. Then find the quotient.

1. Find 20 ÷ 10.

10 × _____ = 20

20 ÷ 10 = _____

2. Find 8 ÷ 2.

2 × _____ = 8

8 ÷ 2 = _____

3. Find 50 ÷ 5.

5 × _____ = 50

50 ÷ 5 = _____

Find the quotient.

4. 100 ÷ 10 = _____

5. 45 ÷ 5 = _____

6. 14 ÷ 2 = _____

7. $2\overline{)12}$ with ☐ above

8. $10\overline{)60}$ with ☐ above

9. $5\overline{)10}$ with ☐ above

Find the missing divisor.

10. 20 ÷ _____ = 5

11. 40 ÷ _____ = 10

12. 4 ÷ _____ = 2

13. MP **Number Sense** The American flag has 50 stars. It has 10 times as many stars as the Chinese flag. How many stars are on the Chinese flag?

14. **Open-Ended** Write a division equation for each description.

The divisor is 2. The quotient is 5. The dividend is 10.

_____ ÷ _____ = _____ _____ ÷ _____ = _____ _____ ÷ _____ = _____

15. **Repeated Reasoning** Complete the table.

Number of $5 Bills	Total Value
	$10
	$15
	$25
	$35
	$40
	$50

16. You buy 20 flowers. You want an equal number of flowers in each of 5 pots. How many flowers do you put in each pot?

17. **Modeling Real Life** Fifty students say they have traveled on an airplane. How many symbols should you draw to complete the picture graph?

Method of Transportation	
Airplane	
Subway	☺ ☺ ☺ ☺
Train	☺ ☺

Each ☺ = 10 students.

18. **Modeling Real Life** A jeweler has 17 gold rings and 18 silver rings. She puts them in a ring tray in 5 rows. How many rings are in each row?

Review & Refresh

Compare.

19. $8 \times 3 \bigcirc 7 \times 3$

20. $15 \bigcirc 5 \times 3$

21. $3 \times 3 \bigcirc 4 \times 3$

Name _____

Divide by 3 or 4

4.4

Learning Target: Divide a number by 3 or 4.

Success Criteria:

- I can model dividing by 3 or 4.
- I can find the quotient of a number and 3 or 4.

Explore and Grow

Put 12 counters into 3 equal groups. Draw to show your groups.

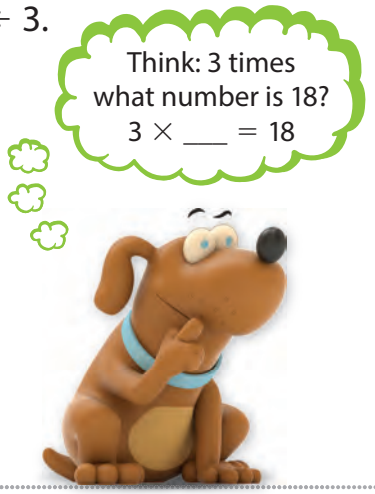
Use your equal groups to help you find the quotient.

$12 \div 3 =$ _____

MP **Structure** Put 12 counters into 4 equal groups. Draw to show your groups. Write a division equation to match. What do you notice?

Think and Grow: Divide by 3 or 4

Example Find 18 ÷ 3.

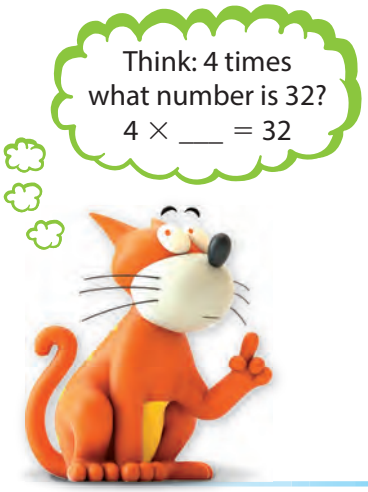


_____ columns

3 rows

18 ÷ 3 = _____ or $3\overline{)18}$

Example Find 32 ÷ 4.



_____ columns

4 rows

32 ÷ 4 = _____ or $4\overline{)32}$

Show and Grow

Complete the model and find the quotient.

1. Find 28 ÷ 4.

_____ columns

4 rows

28 ÷ 4 = _____

2. Find 9 ÷ 3.

_____ columns

3 rows

9 ÷ 3 = _____

Name _____

Apply and Grow: Practice

Complete the model and find the quotient.

3. Find 8 ÷ 4.

_____ columns

4 rows

8 ÷ 4 = _____

4. Find 24 ÷ 3.

_____ columns

3 rows

24 ÷ 3 = _____

Find the quotient.

5. 12 ÷ 3 = _____

6. 20 ÷ 4 = _____

7. 15 ÷ 3 = _____

8. $\square$)32 (4)

9. $\square$)18 (3)

10. $\square$)36 (4)

11. Divide 9 by 3.

12. Divide 12 by 4.

13. Divide 21 by 3.

Compare.

14. 27 ÷ 3 ◯ 28 ÷ 4

15. 30 ÷ 3 ◯ 24 ÷ 4

16. 6 ÷ 3 ◯ 16 ÷ 4

17. There are 36 water bottles in a package. The bottles are in 4 rows. How many water bottles are in each row?

18. DIG DEEPER! Can you divide 20 students into 3 equal groups? Explain.

Think and Grow: Modeling Real Life

You arrange 36 chairs in 4 equal rows. You arrange 21 music stands in 3 equal rows. How many more chairs are in each row than music stands?

Division equations:

There are _____ more chairs in each row.

Show and Grow

19. You arrange 30 cups of fruit punch in 3 equal rows. You arrange 24 cups of lemonade in 4 equal rows. How many more cups of fruit punch are in each row than cups of lemonade?

20. You have a bag of 25 carrot sticks. You eat 5 of them and equally share the rest with 4 friends. How many carrot sticks does each friend get?

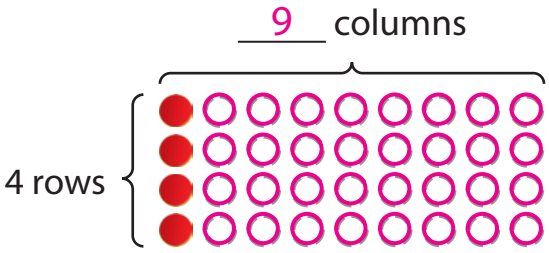
21. Your teacher has 18 yellow pencils and 18 red pencils. She puts 3 pencils on each desk in the class. How many desks are in the class?

Name _____

Homework & Practice 4.4

Learning Target: Divide a number by 3 or 4.

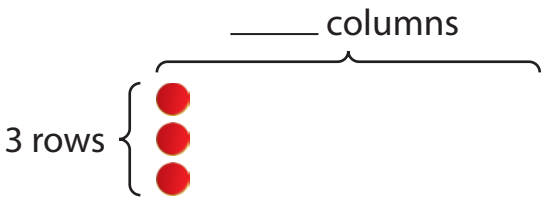
Example Find 36 ÷ 4.



36 ÷ 4 = 9 or $4\overline{)36}$ with 9 in the box

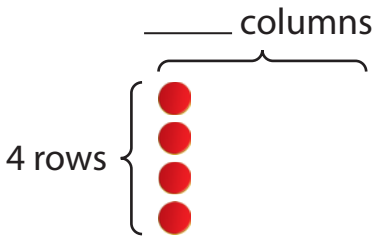
Complete the model and find the quotient.

1. Find 27 ÷ 3.



27 ÷ 3 = _____

2. Find 20 ÷ 4.



20 ÷ 4 = _____

Find the quotient.

3. 6 ÷ 3 = _____

4. 28 ÷ 4 = _____

5. 18 ÷ 3 = _____

6. $4\overline{)8}$

7. $3\overline{)24}$

8. $4\overline{)16}$

Compare.

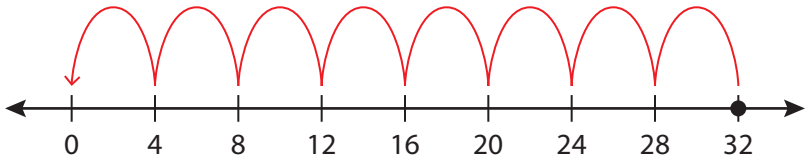
9. 9 ÷ 3 ◯ 15 ÷ 3

10. 12 ÷ 3 ◯ 12 ÷ 4

11. 32 ÷ 4 ◯ 36 ÷ 4

12. **Number Sense** Tissue boxes are sold in packs of 3. A doctor's office needs 21 boxes. How many packs should the office buy?

13. **Structure** Write the division equation represented by the number line.



_____ ÷ _____ = _____

14. **YOU BE THE TEACHER** Your friend says she can use $3 \times 6 = 18$ to help find $6 \div 3$. Is your friend correct? Explain.

15. **Modeling Real Life** A food vending machine has 40 snacks in rows of 4. A drink vending machine has 21 drinks in rows of 3. How many more rows of snacks are there than rows of drinks?

16. **Modeling Real Life** A delivery person has 13 large packages and 14 small packages. He delivers 3 packages to each house. There are none left. How many houses does he deliver to?

Review & Refresh

Find the product.

17. $\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$

18. $\begin{array}{r} 6 \\ \times\ 0 \\ \hline \end{array}$

19. $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$

20. $\begin{array}{r} 10 \\ \times\ 6 \\ \hline \end{array}$

21. $\begin{array}{r} 7 \\ \times\ 6 \\ \hline \end{array}$

Name _____

Divide by 6 or 7

4.5

Learning Target: Divide a number by 6 or 7.

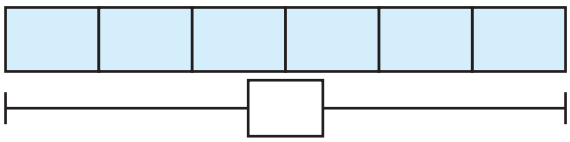
Success Criteria:

- I can model dividing by 6 or 7.
- I can find the quotient of a number and 6 or 7.

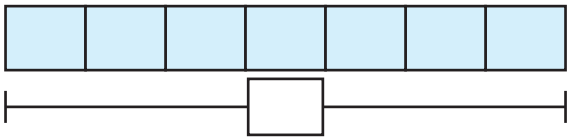
Explore and Grow

Complete the statements and the models.

42 ÷ _____



42 ÷ _____



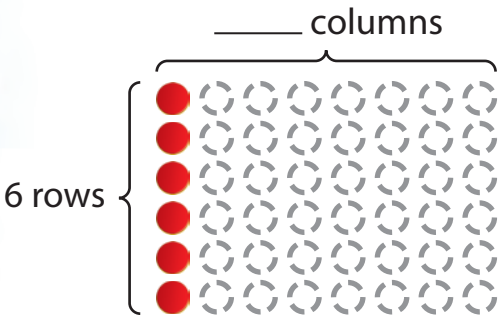
MP **Reasoning** Without solving, which quotient is greater? Explain how you know.

Think and Grow: Divide by 6 or 7

Example Find 48 ÷ 6.

Think: 6 times what number is 48?

$6 \times \_\_\_\_ = 48$

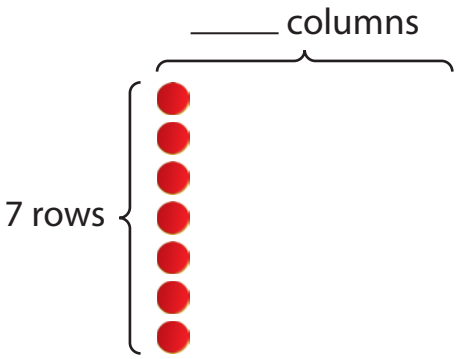


$48 \div 6 = \_\_\_\_$ or $6\overline{)48}$

Example Find 49 ÷ 7.

Think: 7 times what number is 49?

$7 \times \_\_\_\_ = 49$

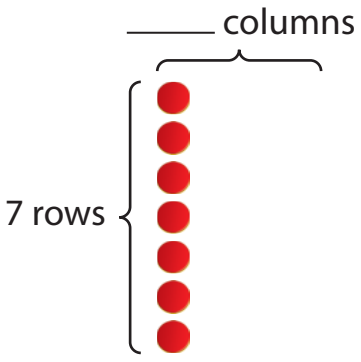


$49 \div 7 = \_\_\_\_$ or $7\overline{)49}$

Show and Grow

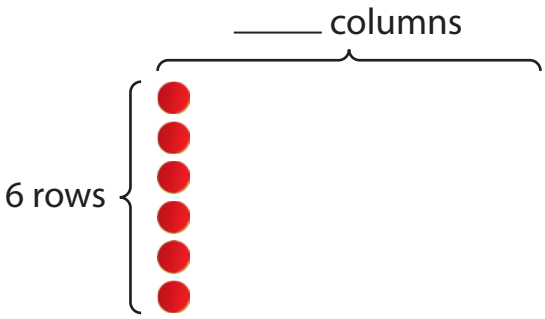
Complete the model and find the quotient.

1. Find 28 ÷ 7.



$28 \div 7 = \_\_\_\_$

2. Find 54 ÷ 6.



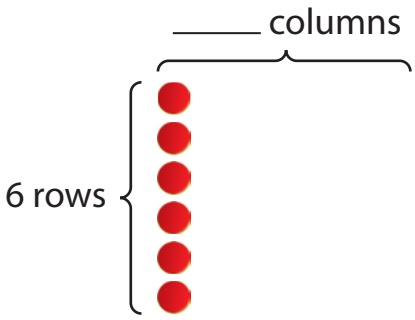
$54 \div 6 = \_\_\_\_$

Name _____

Apply and Grow: Practice

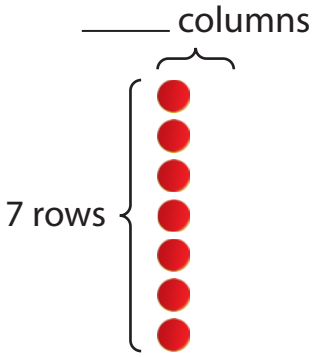
Complete the model and find the quotient.

3. Find 36 ÷ 6.



36 ÷ 6 = _____

4. Find 14 ÷ 7.



14 ÷ 7 = _____

Find the quotient.

5. 60 ÷ 6 = _____

6. 35 ÷ 7 = _____

7. 24 ÷ 6 = _____

8. $6\overline{)12}$

9. $7\overline{)42}$

10. $7\overline{)63}$

Find the missing divisor.

11. 28 ÷ _____ = 7

12. 30 ÷ _____ = 6

13. 70 ÷ _____ = 7

14. You have 24 stones for the game mancala. There are 6 holes on the board. Each hole gets an equal number of stones. How many stones do you put in each hole?

15. MP **Number Sense** Write the correct symbol to make each equation true.

4 ☐ 6 = 24

35 ☐ 7 = 42

56 ☐ 7 = 8

54 ☐ 6 = 48

Think and Grow: Modeling Real Life

You have 54 craft sticks. You use all of the sticks to make hexagons. How many hexagons can you make?

Division equation:

You can make _____ hexagons.

Show and Grow

16. You use 35 craft sticks to make 7 polygons. You use the same number of craft sticks for each polygon. How many craft sticks do you use for each polygon?

17. There are 42 students in gym class. The teacher divides the students into 7 teams. How many more students would be on each team if the teacher divides the students into 6 teams?

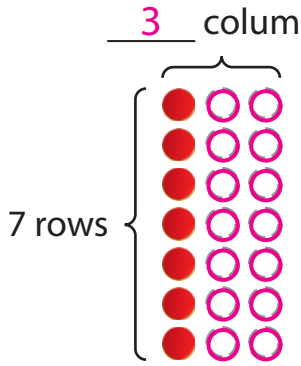
18. You have a tray of 12 oatmeal bars. You keep 6 of them. How many bars can you give to each of your 6 friends?

Name _____

Homework & Practice 4.5

Learning Target: Divide a number by 6 or 7.

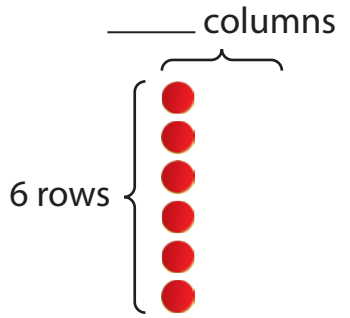
Example Find 21 ÷ 7.



21 ÷ 7 = 3 or $7\overline{)21}$ with 3 in the box

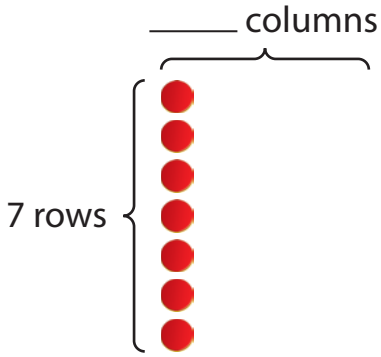
Complete the model and find the quotient.

1. Find 18 ÷ 6.



18 ÷ 6 = _____

2. Find 35 ÷ 7.



35 ÷ 7 = _____

Find the quotient.

3. 42 ÷ 6 = _____

4. 28 ÷ 7 = _____

5. 54 ÷ 6 = _____

6. $7\overline{)49}$

7. $7\overline{)70}$

8. $6\overline{)30}$

Find the missing divisor.

9. $36 \div \_\_\_\_ = 6$

10. $14 \div \_\_\_\_ = 7$

11. $60 \div \_\_\_\_ = 6$

12. **Number Sense** There are 7 continents. A scientist has 63 days to spend studying on all the continents. She wants to spend an equal number of days on each one. How many days can she spend on each continent?

13. **Logic** I am an odd number. When you multiply me by 6, then divide the product by 3, the quotient is 10. What number am I?

14. **DIG DEEPER!** You deal 52 cards to 7 players. Does each player get the same number of cards? Explain.

15. **Modeling Real Life** There are 70 students at a summer camp. A counselor divides the students into teams of 10. How many more teams would the counselor make if he divides the students into teams of 7?

16. **Modeling Real Life** There are 31 students in your class. Seven students are called to the nurse's office to get their hearing checked. Your teacher divides the rest of the students into groups of 6. How many groups are there?

Review & Refresh

Find the product.

17.
$$\begin{array}{r} 8 \\ \times\ 6 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 9 \\ \times\ 8 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 10 \\ \times\ 8 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 8 \\ \times\ 0 \\ \hline \end{array}$$

21.
$$\begin{array}{r} 1 \\ \times\ 8 \\ \hline \end{array}$$

Name _____

Divide by 8 or 9

4.6

Learning Target: Divide a number by 8 or 9.

Success Criteria:

- I can model dividing by 8 or 9.
- I can find the quotient of a number and 8 or 9.

Explore and Grow

Use repeated subtraction to find 48 ÷ 8.

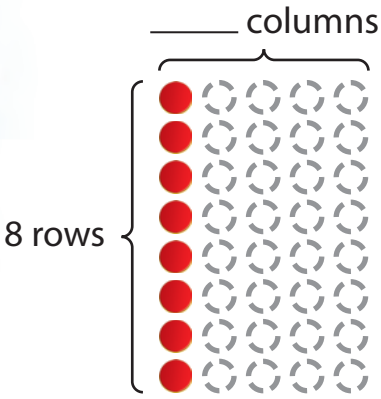
MP **Reasoning** How many times did you subtract 8 from 48? Does the quotient represent the number of groups or the size of the groups? Explain.

Think and Grow: Divide by 8 or 9

Example Find 40 ÷ 8.

Think: 8 times what number is 40?

$8 \times \_\_\_\_ = 40$

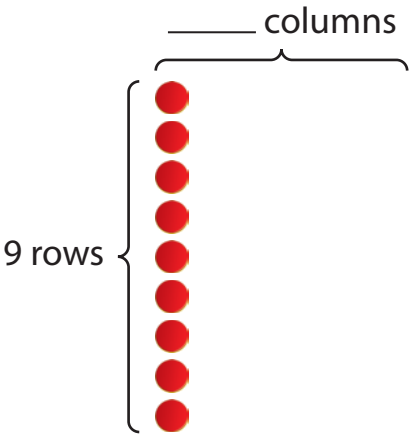


$40 \div 8 = \_\_\_\_$ or $8\overline{)40}$

Example Find 54 ÷ 9.

Think: 9 times what number is 54?

$9 \times \_\_\_\_ = 54$

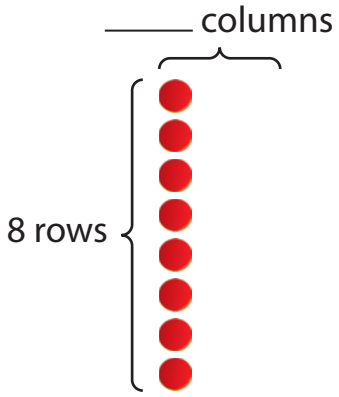


$54 \div 9 = \_\_\_\_$ or $9\overline{)54}$

Show and Grow

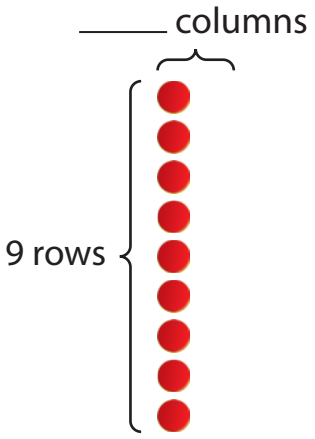
Complete the model and find the quotient.

1. $24 \div 8 = \_\_\_\_$



$24 \div 8 = \_\_\_\_$

2. $18 \div 9 = \_\_\_\_$



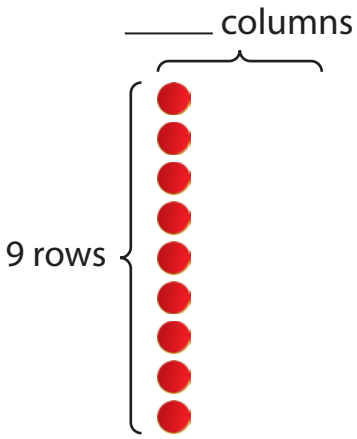
$18 \div 9 = \_\_\_\_$

Name _____

Apply and Grow: Practice

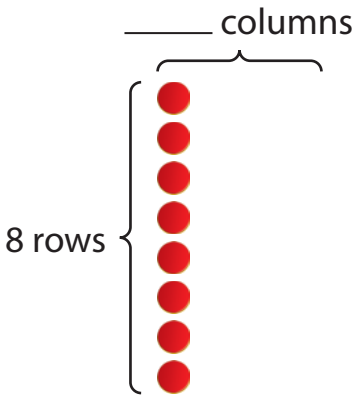
Complete the model and find the quotient.

3. Find 36 ÷ 9.



36 ÷ 9 = _____

4. Find 32 ÷ 8.



32 ÷ 8 = _____

Find the quotient.

5. 45 ÷ 9 = _____

6. 56 ÷ 8 = _____

7. 90 ÷ 9 = _____

8. $9\overline{)18}$

9. $8\overline{)48}$

10. $8\overline{)16}$

11. Divide 54 by 9.

12. Divide 64 by 8.

13. Divide 63 by 9.

Compare.

14. 81 ÷ 9 ◯ 72 ÷ 8

15. 72 ÷ 9 ◯ 40 ÷ 8

16. 16 ÷ 8 ◯ 27 ÷ 9

17. A comic book has 63 pages. You read 9 pages each night. How many nights will it take to read the entire book?

18. MP **Logic** Find the missing number.

$\star\overline{)64}$

★ = _____

Think and Grow: Modeling Real Life

There are 9 innings in a baseball game. The table shows how many innings Newton played each season. How many games has Newton played in all?

Season	Innings Played
Season 1	81
Season 2	63

Division equation:

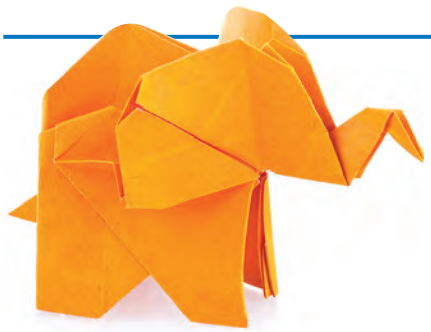
Newton played _____ games in all.

Show and Grow

19. The third-grade and fourth-grade classes are going on a field trip. A van can carry 8 students. How many vans are needed in all?

Grade	Number of Students
3	48
4	56

20. Seventy-two ballet dancers are arranged into an array with 9 columns. How many dancers are in each column?



21. You make 15 paper elephants and 17 paper lions. You give all of the animals away to 8 friends. Each friend gets the same number of animals. How many animals does each friend get?

Name _____

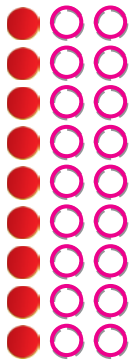
Homework & Practice 4.6

Learning Target: Divide a number by 8 or 9.

Example Find 27 ÷ 9.

3 columns

9 rows



27 ÷ 9 = 3 or $9\overline{)27}$ (quotient 3)

Complete the model and find the quotient.

1. Find 16 ÷ 8.

_____ columns

8 rows

16 ÷ 8 = _____

2. Find 45 ÷ 9.

_____ columns

9 rows

45 ÷ 9 = _____

Find the quotient.

3. 48 ÷ 8 = _____

4. 63 ÷ 9 = _____

5. 54 ÷ 9 = _____

6. $8\overline{)32}$

7. $8\overline{)72}$

8. $9\overline{)18}$

Compare.

9. $90 \div 9 \bigcirc 80 \div 8$ | **10.** $27 \div 9 \bigcirc 56 \div 8$ | **11.** $72 \div 9 \bigcirc 40 \div 8$

12. A food truck owner needs 64 whole wheat pitas. The pitas come in packages of 8. How many packages should she buy?

13. **Patterns** Complete the division tables.

÷	8		24	32		48	56		72	80
8		2			5			8		

÷		18		36	45	54		72	81	
9	1		3				7			10

14. **Structure** Describe two different ways to find $54 \div 9$.

15. **Modeling Real Life** A youth group leader is preparing for a remote-control car race. Batteries are sold in packs of 8. How many packs of batteries should he buy?

Item	Number of Batteries Needed
Cars	48
Remotes	24

16. **Modeling Real Life** Newton divides 32 treats equally between 8 friends. Descartes divides 27 treats equally between 9 friends. Whose friends get more treats? Explain.

Review & Refresh

Find the missing factor.

17. $\_\_\_\_ \times 4 = 0$ | **18.** $1 \times \_\_\_\_ = 2$ | **19.** $9 \times \_\_\_\_ = 9$

Name _____

Divide with 0 or 1

4.7

Learning Target: Divide with 0 or 1.

Success Criteria:

- I can find the quotient when dividing a number by 1.
- I can find the quotient when dividing a number by itself.
- I can find the quotient when dividing 0 by a number.

Explore and Grow

Find the quotients.

$12 \div 3 =$ _____	$8 \div 2 =$ _____	$4 \div 1 =$ _____
$9 \div 3 =$ _____	$6 \div 2 =$ _____	$3 \div 1 =$ _____
$6 \div 3 =$ _____	$4 \div 2 =$ _____	$2 \div 1 =$ _____
$3 \div 3 =$ _____	$2 \div 2 =$ _____	$1 \div 1 =$ _____
$0 \div 3 =$ _____	$0 \div 2 =$ _____	$0 \div 1 =$ _____

MP **Structure** What patterns do you notice? Use the patterns to find each quotient.

$52 \div 52 =$ _____ $0 \div 52 =$ _____ $52 \div 1 =$ _____

Think and Grow: Divide with 0 or 1

Dividing a number by 1 or itself:

- Any number divided by 1 is itself.
- Any number (except 0) divided by itself is 1.

Example Find $7 \div 1$.

Think: 1 times what number is 7?

$1 \times \_\_\_\_\_ = 7$

Write: $7 \div 1 = \_\_\_\_\_$

Example Find $5 \div 5$.

Think: 5 times what number is 5?

$5 \times \_\_\_\_\_ = 5$

Write: $5 \div 5 = \_\_\_\_\_$

Dividing with 0:

- 0 divided by any number (except 0) is 0.
- You cannot divide by 0.

Example Find $0 \div 8$.

Think: 8 times what number is 0?

$8 \times \_\_\_\_\_ = 0$

Write: $0 \div 8 = \_\_\_\_\_$

Example Find $9 \div 0$.

Think: 0 times what number is 9?

There is no such number. So, you cannot divide by 0.

Show and Grow

Write the related multiplication fact. Then find the quotient.

1. $2 \div 2 = \_\_\_\_\_$

2. $0 \div 3 = \_\_\_\_\_$

3. $10 \div 1 = \_\_\_\_\_$

4. $25 \div 25 = \_\_\_\_\_$

Name _____

Apply and Grow: Practice

Write the related multiplication fact. Then find the quotient.

5. $6 \div 1 =$ _____

6. $0 \div 2 =$ _____

7. $9 \div 9 =$ _____

8. $8 \div 1 =$ _____

Find the quotient.

9. $5 \div 1 =$ _____

10. $0 \div 7 =$ _____

11. $4 \div 4 =$ _____

12. $\square$)15 (1)

13. $\square$)0 (6)

14. $\square$)24 (24)

Find the missing dividend or divisor.

15. $2 \div$ _____ $= 2$

16. _____ $\div 12 = 0$

17. $8 \div$ _____ $= 1$

Compare.

18. $4 \div 1 \bigcirc 3 \div 1$

19. $0 \div 6 \bigcirc 0 \div 9$

20. $0 \div 5 \bigcirc 7 \div 1$

21. There are 2 cheese blocks. Each mousetrap has 1 cheese block on it. How many mousetraps are there?

22. MP **Reasoning** Your friend says $14 \div 0$ and $0 \div 14$ both equal 0. Is your friend correct? Explain.

Think and Grow: Modeling Real Life

A clown shares 10 balloons equally with 10 children. How many balloons does each child receive?

Division equation:

Each child receives _____ balloon.

Show and Grow

23. You have 9 tokens. You need 1 token to play an arcade game. How many games can you play?

24. You have 9 quarters. You put 5 of them in your backpack. You divide the other quarters equally among 4 friends. How many quarters does each friend get?

25. You ask your friend the question below.

"What is 475 divided by 475?"

Your friend immediately says 1. How does your friend solve the problem so quickly? Explain.

Name _____

Homework & Practice 4.7

Learning Target: Divide with 0 or 1.

Example Find 5 ÷ 1.

Any number divided by 1 is itself.

So, 5 ÷ 1 = 5.

Example Find 0 ÷ 5.

0 divided by any number (except 0) is 0.

So, 0 ÷ 5 = 0.

Example Find 5 ÷ 5.

Any number (except 0) divided by itself is 1.

So, 5 ÷ 5 = 1.

Example Find 5 ÷ 0.

There is no such number.

So, you cannot divide by 0.

Write the related multiplication fact. Then find the quotient.

1. 3 ÷ 1 = _____

2. 0 ÷ 7 = _____

Find the quotient.

3. 8 ÷ 1 = _____

4. 0 ÷ 2 = _____

5. 7 ÷ 7 = _____

6. $\square$)12 12

7. $\square$)1 4

8. $\square$)10 0

Find the missing dividend or divisor.

9. _____ ÷ 3 = 0

10. 10 ÷ _____ = 10

11. _____ ÷ 4 = 0

Compare.

12. 0 ÷ 7 ◯ 0 ÷ 1

13. 0 ÷ 9 ◯ 2 ÷ 1

14. 6 ÷ 1 ◯ 6 ÷ 6

15. **Reasoning** How are the multiplication rules for 0 and 1 similar to the division rules for 0 and 1? How are they different?

16. **Number Sense** Which has the greatest quotient?

$6 \div 6$ $4 \div 1$ $0 \div 8$ $3 \div 1$

17. **DIG DEEPER!** Use the numbers 0, 1, 5, and 10 to make the number sentence true.

_____ ÷ _____ < _____ ÷ _____

18. **Modeling Real Life** There are 5 bird eggs. An equal number of eggs hatch each day for 5 days. How many eggs hatch each day?

19. **Modeling Real Life** A hotel orders twenty-four 48-inch televisions and twenty-six 60-inch televisions. The hotel puts 1 television in each room. How many rooms can get a new television?

Review & Refresh

Find the product.

20. $2 \times 4 \times 1 =$ _____

21. $2 \times 3 \times 5 =$ _____

22. $2 \times 3 \times 7 =$ _____

23. $5 \times (2 \times 9) =$ _____

24. $2 \times (3 \times 3) =$ _____

25. $2 \times (8 \times 1) =$ _____

Name _____

Practice Division Strategies 4.8

Learning Target: Use a strategy to divide.

Success Criteria:

- I can choose a strategy to solve a division problem.
- I can divide and write the quotient.
- I can explain the strategy I used.

Explore and Grow

Use any strategy to find the quotient.

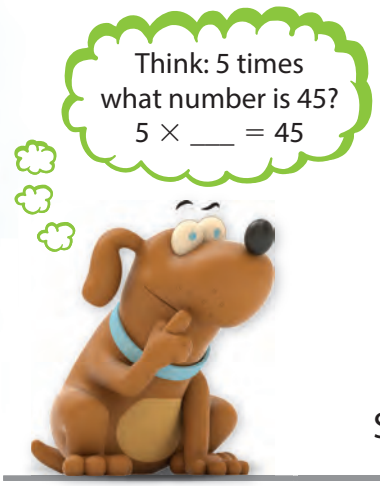
$36 \div 4 =$ _____

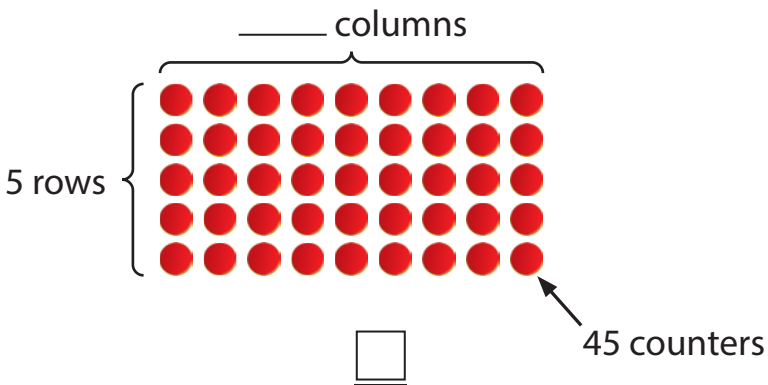
MP **Construct Arguments** What other strategies can you use to solve? Explain the strategy to your partner.

Think and Grow: Practice Division Strategies

Example Find 45 ÷ 5.

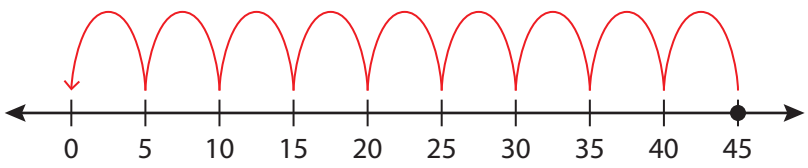
One Way: Use a multiplication fact. Draw an array to help.





So, 45 ÷ 5 = _____ or $5\overline{)45}$.

Another Way: Use a number line. Start at 45. Count back by 5s until you reach 0.



So, 45 ÷ 5 = _____ or $5\overline{)45}$.

Show and Grow

Use any strategy to find the quotient.

1. 30 ÷ 6 = _____

2. 56 ÷ 8 = _____

Name _____

Apply and Grow: Practice

Use any strategy to find the quotient.

3. $40 \div 10 =$ _____

4. $18 \div 3 =$ _____

5. $49 \div 7 =$ _____

6. _____ $= 36 \div 9$

7. _____ $= 4 \div 4$

8. _____ $= 18 \div 2$

9. $\square$ $1\overline{)12}$

10. $\square$ $5\overline{)40}$

11. $\square$ $8\overline{)48}$

12. $\square$ $6\overline{)24}$

13. $\square$ $4\overline{)20}$

14. $\square$ $7\overline{)21}$

15. $\square$ $2\overline{)20}$

16. $\square$ $7\overline{)0}$

17. Divide 54 by 6.

18. Divide 27 by 9.

19. Divide 70 by 10.

20. A construction worker wants to build a 32-foot-long wall in 8 hours. How many feet should he complete each hour so that it is built on time?

21. **Writing** How can you use multiplication to help find $42 \div 7$? Explain.

22. **YOU BE THE TEACHER** Your friend says she only needs to write two equations for the 4, 4, 16 fact family. Is your friend correct? Explain.

Think and Grow: Modeling Real Life

There are 72 oranges at a grocery store arranged into an array with 9 columns. There are 80 lemons arranged into an array with 8 columns. Which fruit has more rows?

Models:

Division equations:

The _____ have more rows.

Show and Grow

23. There are 63 peaches arranged into an array with 7 rows. There are 70 pears arranged into an array with 10 rows. Which fruit has more columns?

24. Newton has 20 quarters. He wants to trade all of them for bills. How many $1 bills would he get? How many $5 bills would he get?

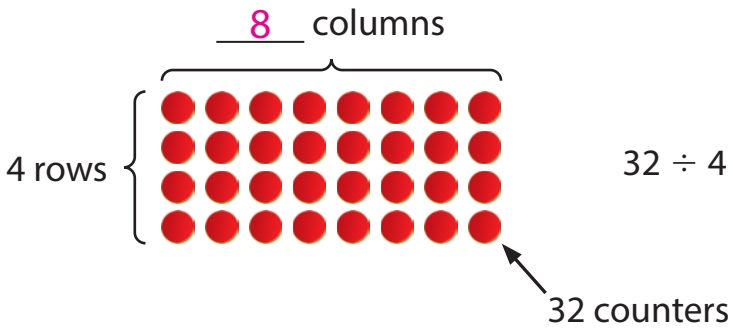
25. A box of fruit snacks costs $5. Each box has 8 bags. Descartes spends $20 on fruit snacks. How many bags of fruit snacks does he get?

Name _____

Homework & Practice 4.8

Learning Target: Use a strategy to divide.

Example Find 32 ÷ 4.



$32 \div 4 = \underline{8}$ or $4\overline{)32}$ with 8 above

Use any strategy to find the quotient.

1. $8 \div 1 =$ _____

2. $25 \div 5 =$ _____

3. $72 \div 8 =$ _____

4. _____ $= 45 \div 9$

5. _____ $= 0 \div 3$

6. _____ $= 18 \div 2$

7. $9\overline{)27}$

8. $7\overline{)14}$

9. $2\overline{)20}$

10. $3\overline{)12}$

11. $16\overline{)16}$

12. $10\overline{)70}$

13. $5\overline{)30}$

14. $8\overline{)64}$

15. Divide 60 by 6.

16. Divide 9 by 3.

17. Divide 63 by 9.

18. DIG DEEPER! Without dividing, how can you tell which quotient is smaller, $30 \div 5$ or $30 \div 6$? Explain.

19. **Number Sense** Which expressions have a quotient of 7?

$70 \div 10$ $\quad$ $64 \div 8$ $\quad$ $35 \div 5$ $\quad$ $42 \div 7$

$21 \div 3$ $\quad$ $24 \div 8$ $\quad$ $7 \div 1$

20. **Reasoning** Use $+$, $-$, $\times$, or $\div$ to complete the equations.

$3 \bigcirc 3 = 18 \div 2$ $\quad$ $6 \times 8 = 19 \bigcirc 29$ $\quad$ $100 \bigcirc 75 = 5 \times 5$

$15 \div 3 = 12 \bigcirc 7$ $\quad$ $36 \bigcirc 9 = 4 \times 1$ $\quad$ $60 \div 10 = 42 \bigcirc 7$

21. **Modeling Real Life** Newton has 60 dimes. He trades all of them for $1 bills. How many bills does he get?

22. **Modeling Real Life** Two girls are getting braids in their hair. The first girl wants a total of 30 beads with 3 beads on each braid. The second girl wants a total of 45 beads with 5 beads on each braid. Which girl has more braids?

Review & Refresh

Find the sum.

23.
$$\begin{array}{r} 460 \\ +\ 137 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 625 \\ +\ 297 \\ \hline \end{array}$$

25.
$$\begin{array}{r} 386 \\ +\ 364 \\ \hline \end{array}$$

Name _____

Problem Solving: Division 4.9

Learning Target: Use the problem-solving plan to solve word problems.

Success Criteria:

- I can understand a problem.
- I can make a plan to solve.
- I can solve a problem.

Explore and Grow

Use any strategy to solve.

There are 27 cups for a cup-stacking game. There are 3 players. Each player gets an equal number of cups. How many cups does each player get?

MP **Reasoning** Compare your strategy to your partner's strategy. How are they the same? How are they different?

Think and Grow: Using the Problem-Solving Plan

Example Newton buys a box of flower vases. The box has 2 rows with 4 vases in each row. The box costs $48. How much does each vase cost?

Understand the Problem

What do you know?

- The box has _____ rows of vases.
- Each row has _____ vases.
- The box costs _____.

What do you need to find?

- You need to find how much each _____ costs.

Make a Plan

How will you solve?

- Multiply _____ by _____ to find how many _____ are in the box.
- Then divide _____ by the product.

Solve

4 columns

2 rows

$2 \times 4 = \_\_\_\_$

48

$48 \div \_\_\_\_ = \_\_\_\_$

Each vase costs _____.

Show and Grow

1. Descartes buys 3 packs of colored pencils and a backpack. He spends $33. The backpack costs $12. Each pack of colored pencils costs the same amount. How much is each pack of colored pencils?

Name _____

Apply and Grow: Practice

2. You have 4 pages of homework and 2 chores to complete before you get free time. Each task takes 7 minutes to complete. You have 60 minutes until dinner. What information do you know that will help you find how much free time you will have before dinner?

3. You are using dots to create a picture. You use 99 dots in all. Forty-six are blue. Thirty-five are purple. You use an equal number of yellow and green dots for the rest of the picture. How many green dots are in your picture?

4. You are making oatmeal for each of your 4 family members. You have 36 raisins and 20 blueberries. You want everyone to get an equal number of each. How many raisins and how many blueberries should you put in each bowl?

Think and Grow: Modeling Real Life

You have 2 boxes of crayons. One box has 24 crayons. The other box has 48 crayons. Eighteen of the crayons are broken. You put the crayons that are not broken into 6 equal groups. How many crayons are in each group?

Understand the problem:

Make a plan:

Solve:

There are _____ crayons in each group.

Show and Grow

5. You have 2 bags of beach glass. One bag has 17 pieces. The other bag has 18 pieces. You give 5 pieces to your friend. You sort the rest of the pieces into 3 equal groups. How many pieces are in each group?

Explain how you can check your answer.

Name _____

Homework & Practice 4.9

Learning Target: Use the problem-solving plan to solve problems.

Example A grocery store has 3 crates of 10 pineapples. The manager wants to display the pineapples in rows of 5. How many rows of pineapples are there?

Understand the Problem

What do you know?

- There are 3 crates.
- There are 10 pineapples in each crate.
- The manager wants rows of 5 pineapples.

What do you need to find?

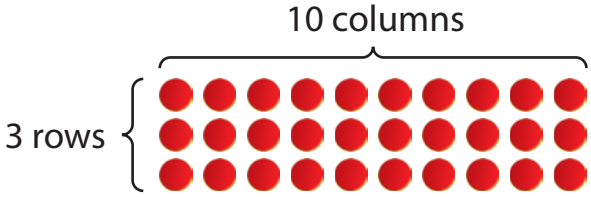
- You need to find how many rows of pineapples there are.

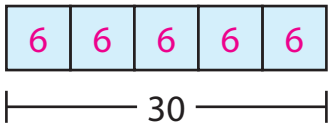
Make a Plan

How will you solve?

- Multiply 3 by 10 to find how many pineapples there are in all.
- Then divide the product by 5.

Solve





$3 \times 10 = 30$

$30 \div 5 = 6$

There are 6 rows of pineapples.

1. A truck carries 4 chairs and a table. The table weighs 35 pounds. The total weight of the chairs and table is 63 pounds. How much does each chair weigh?

2. You volunteer at a nursing home for 3 hours a day. You volunteered 6 hours last week and 12 hours this week. How many days did you volunteer?

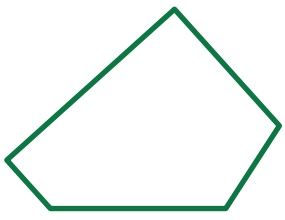
3. **Writing** Write and solve your own word problem involving division.

4. **Modeling Real Life** You have 2 trays of flavored ice cubes. One tray has 16 ice cubes. The other tray has 12 ice cubes. Eight of the ice cubes are not completely frozen yet. You divide the frozen ice cubes equally into 5 glasses. How many ice cubes are in each glass?

5. **Modeling Real Life** You have 2 bags of seashells. One bag has 13 seashells. The other bag has 25 seashells. You give 6 seashells to your friend. You sort the rest of the seashells into 4 equal groups. How many seashells are in each group?

Review & Refresh

6.

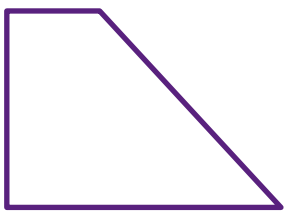


_____ sides

_____ vertices

Shape: _____

7.



_____ sides

_____ vertices

Shape: _____

Name _____

Performance Task 4

You, your friend, and your cousin run for class president. Three teachers and 60 students are gathered in the gym for the election.

1. There is one teacher in each row. Each row has the same number of students. Find the number of people sitting in each row.

2. Sixty students vote in the election. Thirty students vote for you. Twenty students vote for your friend. Five students vote for your cousin.

a. How many students still need to vote?

b. The remaining students all vote for your cousin. Complete the picture graph.

Election Results	
You	
Friend	
Cousin	

Each ☺ = 5 students.

3. As class president, you raise $95 to buy new toys for the school playground. Each ball costs $8 and each flying disc costs $6. You want to buy some balls and 3 flying discs. How many balls can you buy? How much money do you have left?

Four in a Row Blastoff!

Directions:

1. Players take turns rolling the die.
2. On your turn, choose and solve any division expression in the row of your roll. If you find the correct answer, place a counter on the space.
3. The first player to create 4 counters in a row, horizontally, vertically, or diagonally, wins! A spaceship blasts off! Cross out one spaceship and play again until all spaceships have blasted off!

6 ÷ 1	2 ÷ 1	4 ÷ 1	3 ÷ 1	1 ÷ 1	5 ÷ 1
8 ÷ 2	12 ÷ 2	18 ÷ 2	10 ÷ 2	16 ÷ 2	4 ÷ 2
12 ÷ 3	21 ÷ 3	18 ÷ 3	9 ÷ 3	15 ÷ 3	6 ÷ 3
16 ÷ 4	8 ÷ 4	20 ÷ 4	12 ÷ 4	24 ÷ 4	32 ÷ 4
35 ÷ 5	10 ÷ 5	20 ÷ 5	40 ÷ 5	30 ÷ 5	25 ÷ 5
18 ÷ 6	42 ÷ 6	12 ÷ 6	36 ÷ 6	24 ÷ 6	30 ÷ 6

Name _____

Chapter Practice 4

4.1 Use Arrays to Divide

1. There are 20 counters. The counters are in 4 equal rows. How many counters are in each row?

4 rows of _____

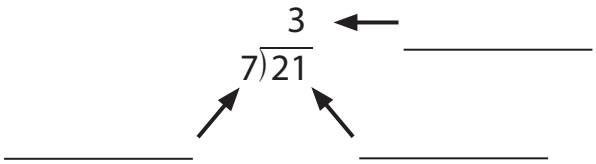
20 ÷ 4 = _____

2. You have 32 counters. You arrange them with 8 counters in each row. How many rows of counters do you make?

_____ rows of 8

32 ÷ 8 = _____

3. MP **Precision** Label the parts of the division problem using *quotient*, *dividend*, and *divisor*.



_____ _____ _____

4.2 Relate Multiplication and Division

Write the fact family for the numbers.

4. 1, 5, 5

5. 2, 7, 14

6. 9, 5, 45

7. 8, 6, 48

4.3 Divide by 2, 5, or 10

Write the related multiplication fact. The find the quotient.

8. Find 15 ÷ 5.

5 × _____ = 15

15 ÷ 5 = _____

9. Find 14 ÷ 2.

2 × _____ = 14

14 ÷ 2 = _____

10. Find 40 ÷ 10.

10 × _____ = 40

40 ÷ 10 = _____

Find the quotient.

11. 60 ÷ 10 = _____

12. 20 ÷ 5 = _____

13. 20 ÷ 2 = _____

14. $5\overline{)25}$

15. $2\overline{)18}$

16. $10\overline{)30}$

4.4 Divide by 3 or 4

Find the quotient.

17. 18 ÷ 3 = _____

18. 40 ÷ 4 = _____

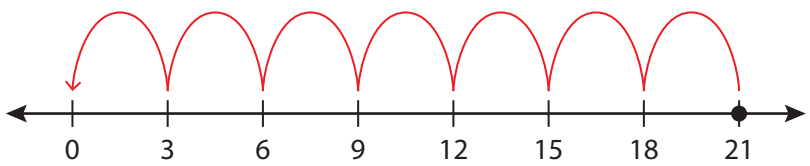
19. 24 ÷ 4 = _____

20. $3\overline{)27}$

21. $4\overline{)12}$

22. $3\overline{)24}$

23. MP **Structure** Write the division equation represented by the number line.



_____ ÷ _____ = _____

4.5 Divide by 6 or 7

Find the quotient.

24. $42 \div 6 =$ _____

25. $54 \div 6 =$ _____

26. $28 \div 7 =$ _____

27. $\square$ $7\overline{)21}$

28. $\square$ $7\overline{)42}$

29. $\square$ $6\overline{)30}$

Find the missing divisor.

30. $18 \div$ _____ $= 6$

31. $35 \div$ _____ $= 7$

32. $36 \div$ _____ $= 6$

4.6 Divide by 8 or 9

Find the quotient.

33. $36 \div 9 =$ _____

34. $64 \div 8 =$ _____

35. $90 \div 9 =$ _____

36. $\square$ $8\overline{)32}$

37. $\square$ $9\overline{)45}$

38. $\square$ $8\overline{)56}$

Compare.

39. $63 \div 9 \bigcirc 48 \div 8$

40. $32 \div 8 \bigcirc 36 \div 9$

41. $54 \div 9 \bigcirc 80 \div 8$

42. A crayon box has 48 crayons. There are 8 crayons in each row. How many rows of crayons are there?

4.7 Divide with 0 or 1

Find the quotient.

43. $13 \div 13 =$ _____

44. $0 \div 9 =$ _____

45. $3 \div 1 =$ _____

46. $\square \overline{)2}$ with 1

47. $\square \overline{)0}$ with 5

48. $\square \overline{)10}$ with 10

49. **Number Sense** Which has the greatest quotient?

$15 \div 15$ $0 \div 10$ $6 \div 1$ $8 \div 1$

4.8 Practice Division Strategies

Use any strategy to find the quotient.

50. $16 \div 4 =$ _____

51. $72 \div 9 =$ _____

52. $20 \div 10 =$ _____

53. Divide 18 by 6.

54. Divide 49 by 7.

55. Divide 30 by 6.

4.9 Problem Solving: Division

56. **Modeling Real Life** A group of 13 servicemen and 11 servicewomen are being honored at an event. They stand in 3 equal rows. How many servicemen and servicewomen are in each row?

Name _____

Cumulative Practice 1–4

1. Which expression is *not* the same as 6×3?

Ⓐ 3×6

Ⓑ $3 + 3 + 3 + 3 + 3 + 3$

Ⓒ $6 + 6 + 6$

Ⓓ $6 \times 6 \times 6$

---

2. Use the clues to find the number.

- The number is more than 10.
- The number is less than 20.
- When the number is divided by 3, the quotient is even.
- When the number is divided by 4, the quotient is odd.

What is the number?

Ⓐ 15

Ⓑ 12

Ⓒ 24

Ⓓ 16

---

3. Which expression is equal to 6×7?

Ⓐ $(7 \times 8) - 2$

Ⓑ $(5 \times 7) + (1 \times 7)$

Ⓒ $(5 \times 1) + (5 \times 2)$

Ⓓ $(5 \times 1) \times 7$

---

4. Which number makes the statement true?

$2 \times 4 = \square \times 2$

Ⓐ 4

Ⓑ 8

Ⓒ 16

Ⓓ 2

5. Which equation is true?

Ⓐ $(5 \times 4) \times 1 \stackrel{?}{=} (5 \times 4) + 1$

Ⓑ $(5 \times 4) + 1 \stackrel{?}{=} (5 \times 4) \times 1$

Ⓒ $5 \times (4 \times 1) \stackrel{?}{=} (5 \times 4) \times 1$

Ⓓ $5 \times (4 \times 1) \stackrel{?}{=} 5 + (4 \times 1)$

---

6. You earn 10 points for each level you complete in a video game. When you have to restart a level, you lose 2 points. You complete 9 levels, but have to restart 6 levels. How many points do you have?

Ⓐ 78 points

Ⓑ 102 points

Ⓒ 90 points

Ⓓ 42 points

---

7. The table shows the numbers of items at the finish line of a race.

Think
Solve
Explain

Item	Number of Packages	Number in Each Package
Water bottles	9	8
Medals	7	9
Bananas	9	6

Part A How many medals are there?

Part B Sixty students are running in the race. Is there enough of each item for all of the students? Explain.

8. Which numbers are multiples of 2, 5, and 10?

- ☐ 20
- ☐ 38
- ☐ 15
- ☐ 6

9. Newton and Descartes share 18 toys equally. Which equation shows how many toys each has?

- Ⓐ $18 \div 2 = 9$
- Ⓑ $18 - 2 = 16$
- Ⓒ $18 \times 2 = 36$
- Ⓓ $18 \div 1 = 18$

10. Which multiplication fact can Newton use to check his answer?

$$72 \div 8 = 9$$

- Ⓐ $9 \times 72 = \square$
- Ⓑ $9 \div 8 = \square$
- Ⓒ $72 \times 8 = \square$
- Ⓓ $9 \times 8 = \square$

11. Thirty dollars is divided evenly among 6 children. How much money (in dollars) does each child receive?

12. Which expressions have a product of 16?

- ☐ 4×4
- ☐ 3×5
- ☐ 2×8
- ☐ 6×3

13. Which equation shows the Multiplication Property of Zero?

Ⓐ $8 + 0 = 8$

Ⓑ $8 - 0 = 8$

Ⓒ $8 \times 1 = 8$

Ⓓ $8 \times 0 = 0$

---

14. One ticket to an amusement park costs $8. How much does it cost for a family of 4?

Ⓐ $32

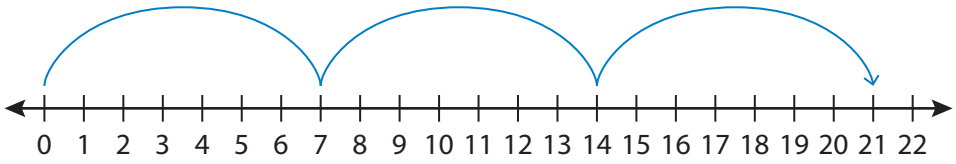
Ⓑ $48

Ⓒ $22

Ⓓ $38

---

15. Which expression is represented by this number line?



Ⓐ $21 + 3$

Ⓑ 3×7

Ⓒ $21 - 3$

Ⓓ $7 + 3$

---

16. Which equations are in the fact family for 2, 10, and 20?

☐ $2 \times 10 = 20$

☐ $10 \times 2 = 20$

☐ $4 \times 5 = 20$

☐ $20 \div 10 = 2$

☐ $20 \div 2 = 10$

☐ $20 \div 5 = 4$

Name _____

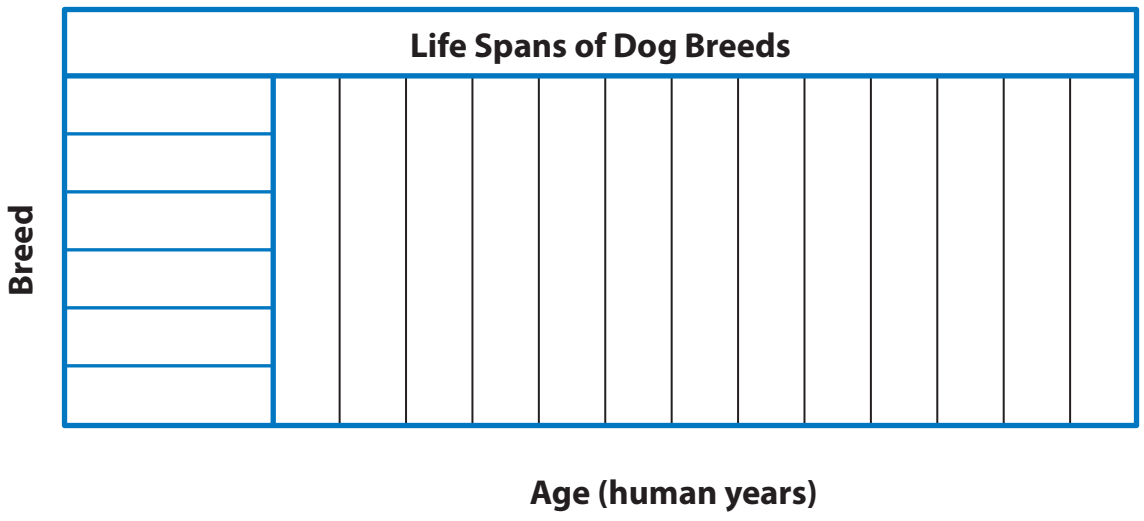
STEAM Performance Task 1–4

Dogs grow just like humans. They start as puppies, become adults, and then enter old age. But dogs age faster than humans. In general, to find the age of a small dog in dog years, multiply its age in human years by 5. To find the age of a large dog in dog years, multiply its age in human years by 7.

1. A small dog and a large dog are both 9 years old in human years. How old is each dog in dog years?

2. The table shows the usual life spans of 6 dog breeds in dog years. Find each life span in human years. Organize the data in a bar graph.

Life Spans of Dog Breeds (dog years)			
Small Dogs		**Large Dogs**	
Beagle	60	Great Dane	49
Pug	55	Saint Bernard	56
Pomeranian	50	German Shepherd	70



3. Write and answer a question about your graph.

4. Cats also age faster than humans. The table shows the age of a cat for each human year.

Age (human years)	Age (cat years)
1	15
2	24
3	28
4	32
5	36

a. A cat is 6 years old in human years. If the pattern in the table continues, how old is the cat in cat years?

b. A cat is 10 years old in human years. How old is the cat in cat years?

c. A small dog, a large dog, and a cat are each 6 years old (in human years). Order the animals by their ages (in animal years) from least to greatest.

5. Use the Internet or another resource to answer each question.

a. What is another dog breed that is not listed in the table?

b. About how long, how tall, and how heavy is one of these dogs?

Length: _____ inches Height: _____ inches Weight: _____ pounds

c. What is one interesting fact about this dog breed?

d. About how long would you expect this breed to live?