Name _____ Date _____

Moving Ahead with Division

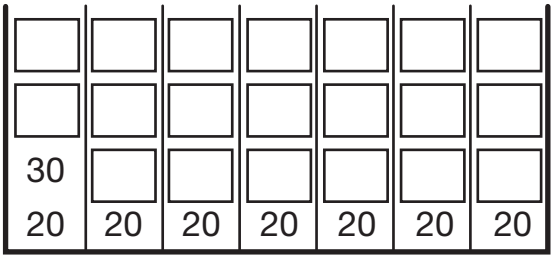
Column Method and Rectangle Model

Self-Check: Questions 1–2

For Self-Check Questions 1 and 2, fill in the boxes below to complete the solutions to the division problems shown.

1. Use the column method to divide.

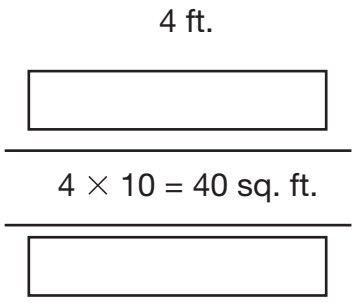
441 ÷ 7 = ☐

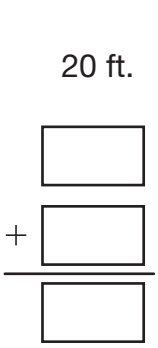


Into the Columns	Left to Divide
☐	☐
70	☐
☐	☐
140	☐

2. Use the rectangle model.

☐
4) 130





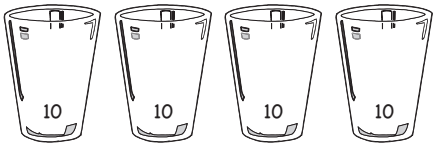
130
− 80
50
☐
10
− ☐
2

Use the Self-Check questions and the menu to choose practice with the column method and rectangle model for division.

Workshop Menu			
Can I Do This?	**▲ Working On It!**	**● Getting It!**	**■ Got It!**
	I could use some extra help. — Linda	I just need some more practice. — Romesh	I'm ready for a challenge. — Jackie
Divide using the column method.	**Questions 3–7**	**Questions 5–10**	**Questions 8–11**
Divide using the rectangle model.	**Question 12**	**Questions 13–14**	**Questions 13–14**

Name _____ Date _____

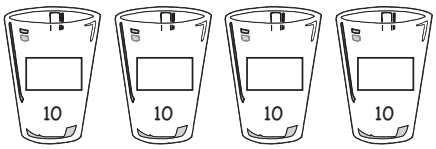
▲□□ **3.** Linda wants to divide 76 chocolates evenly into 4 cups. Work with a partner and use connecting cubes to show each of her steps. Fill in the blank boxes as you go.



First I put ☐ chocolates in each cup.

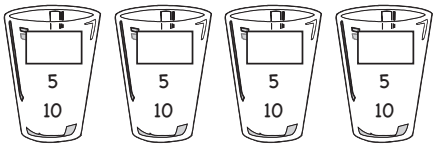
I have divided ☐ of the chocolates so far.

I still have ☐ left to divide.



Next I put 5 more chocolates in each cup.

Altogether, I have divided ☐ of the chocolates so far. I still have ☐ left to divide.



Finally I put ☐ more chocolates in each cup.

Now I have divided ☐ of the chocolates.

I have no more chocolates to divide.

There are ☐ chocolates in each cup. So, 76 ÷ 4 = ☐ .

▲□□ **4.** Roberto uses the column method to divide:

								Into the Columns	Left to Divide
1	1	1	1	1	1	1	1	8	0
5	5	5	5	5	5	5	5	40	8
10	10	10	10	10	10	10	10	80	47
20	20	20	20	20	20	20	20	160	127

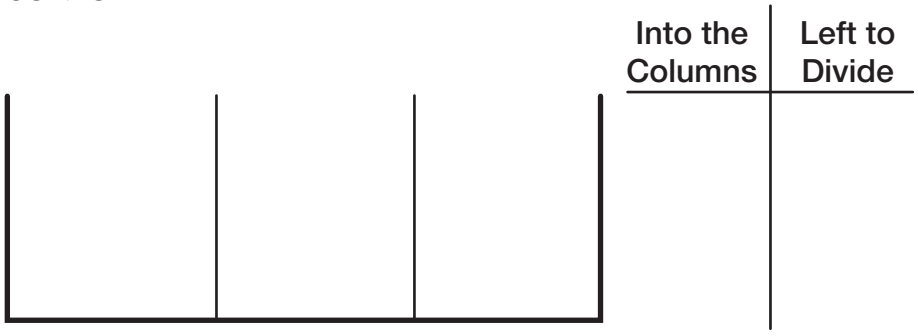
What is the answer to the division problem? $8\overline{)288}$ ☐

Explain how you found the answer.

Name _____ Date _____

For Questions 5–7, use connecting cubes to solve the problems. Record each of your steps in the columns as you go.

▲●□ **5.** 93 ÷ 3



93 ÷ 3 = _____

▲●□ **6.** Jacob wants to save $75 over the next 5 months by saving the same amount each month. How much should he save each month?

_____ ÷ _____ = _____

▲●□ **7.** Ming has 115 chocolates to share evenly among 8 students. How many chocolates will each student get?

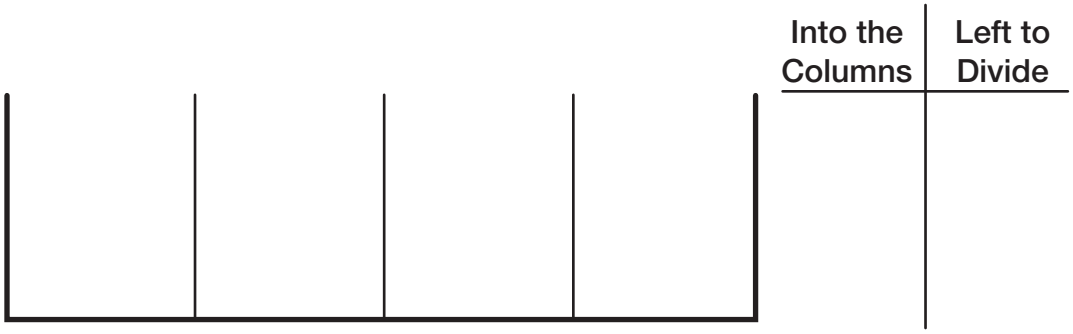
Were there any chocolates left over that you could not divide evenly? How many? (This number of chocolates is the remainder.)

_____ ÷ _____ = _____ R _____

Name _____ Date _____

For Questions 8–11 solve the problems using the column method.

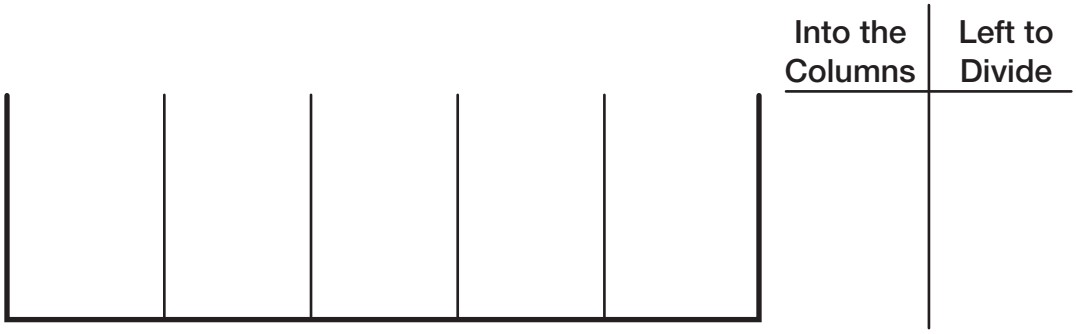
8. 575 ÷ 4



575 ÷ 4 = _____

9. A. Five families held a yard sale and made $643. If they divide the money equally, how much will each family earn to the nearest dollar?

_____



B. Is there any money left over? If so, how should the families take care of it?

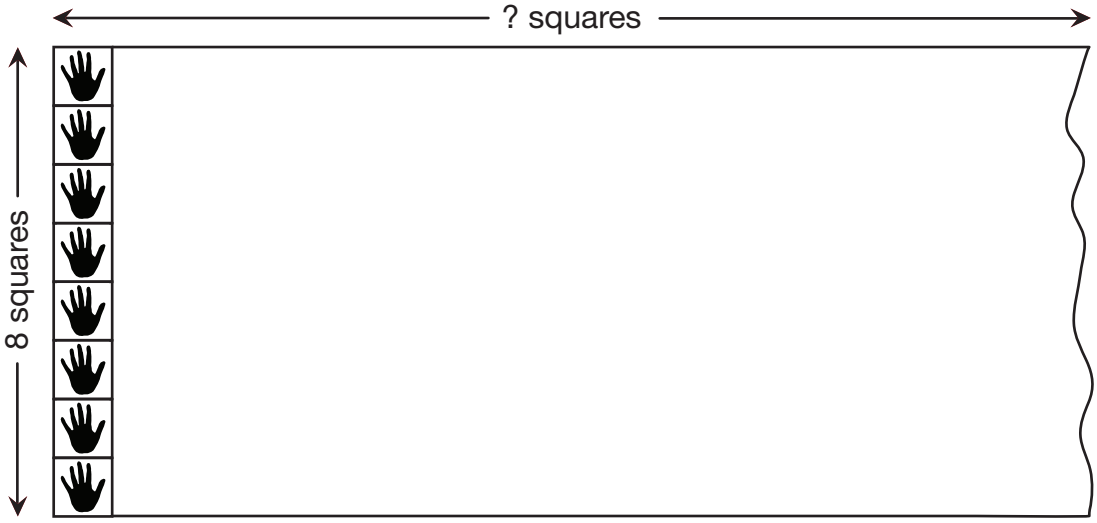
Name _____ Date _____

10. 902 ÷ 7 = _____

11. The high school football coach spent $1446 on 12 new uniforms. What was the price of one uniform?

Name _____ Date _____

12. The students in Mrs. Dewey's class want to create a handprint mural during the school fair. Eight handprint squares fit along the width of the paper.

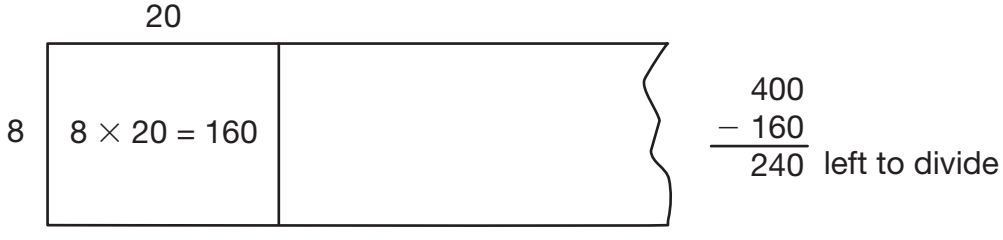


A. How many squares need to fit along the length of the paper if 24 total squares are to fit on the mural? Explain your thinking.

B. How many squares need to fit along the length of the paper if 80 total squares are to fit on the mural? Explain your thinking.

C. How many squares need to fit along the length of the paper if 400 total squares are to fit on the mural?

D. Jerome started by using the diagram below. Help him finish.

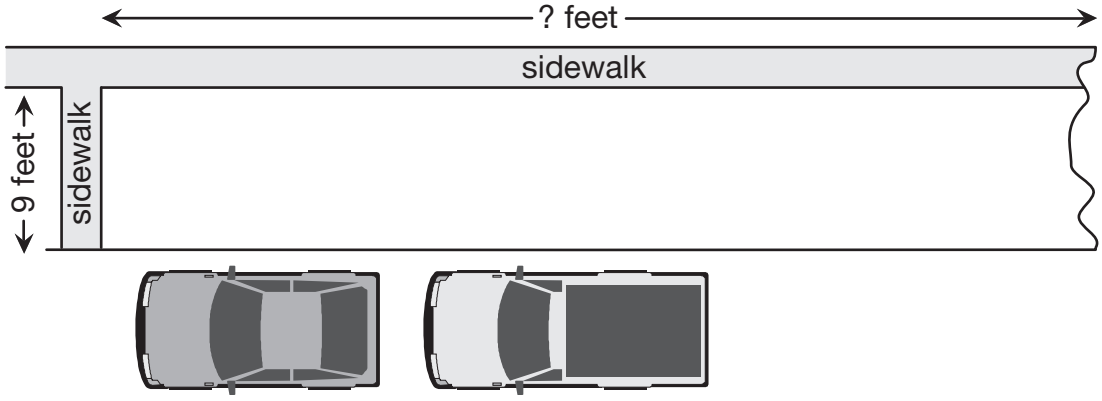


400
− 160
240 left to divide

400 ÷ 8 = _____

Name _____ Date _____

13. Professor Peabody has enough grass seed to cover 300 square feet. He wants to plant grass in the space between the sidewalk and the street. If the space is 9 feet wide, how far along the sidewalk can Professor Peabody plant grass seed?



Number sentence _____

14. Use the rectangle model to solve 855 ÷ 7.

Number sentence _____

Name _____ Date _____

Dividing By Multiples of 10

Self-Check: Questions 15–16

15. Compute the missing quantities.

A. $2 \times 30 =$ _____

$30 \times 2 =$ _____

$60 \div 2 =$ _____

$60 \div 30 =$ _____

B. $400 \times 50 =$ _____

$50 \times 400 =$ _____

$20{,}000 \div 400 =$ _____

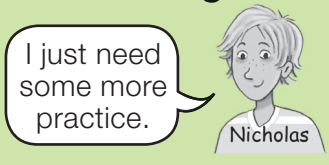
$20{,}000 \div 50 =$ _____

16. Use mental math to solve the division problems.

A. $490 \div 70 =$ _____

B. $40{,}000 \div 80 =$ _____

Use the Self-Check questions and the menu to choose practice for dividing numbers that are multiple of tens.

Workshop Menu			
Can I Do This?	**▲ Working On It!** 	**● Getting It!** 	**■ Got It!** 
Divide with numbers that are multiples of 10.	**Questions 17–19**	**Questions 18–20**	**Questions 20–21**

Name _____ Date _____

Complete the fact families in Questions 17 and 18.

17. A. $2 \times 300 =$ _____

$300 \times 2 =$ _____

$600 \div 2 =$ _____

$600 \div 300 =$ _____

B. $2 \times 3000 =$ _____

$3000 \times 2 =$ _____

$6000 \div 2 =$ _____

$6000 \div 3000 =$ _____

C. $20 \times 30 =$ _____

$30 \times 20 =$ _____

$600 \div 20 =$ _____

$600 \div 30 =$ _____

D. $20 \times 300 =$ _____

$300 \times 20 =$ _____

$6000 \div 20 =$ _____

$6000 \div 300 =$ _____

18. A. $2 \times 50 =$ _____

$50 \times 2 =$ _____

$100 \div 2 =$ _____

$100 \div 50 =$ _____

B. $2 \times 500 =$ _____

$500 \times 2 =$ _____

$1000 \div 2 =$ _____

$1000 \div 500 =$ _____

C. $20 \times 50 =$ _____

$50 \times 20 =$ _____

$1000 \div 20 =$ _____

$1000 \div 50 =$ _____

D. $20 \times 500 =$ _____

$500 \times 20 =$ _____

$10{,}000 \div 20 =$ _____

$10{,}000 \div 500 =$ _____

E. Look back at the fact families in Questions 17 and 18. How do the multiplication facts help you solve the division facts?

Name _____ Date _____

19. Use John's thinking to fill in the boxes.

800 ÷ 20 = ?

I know 20 × 40 = 800.

So, 800 ÷ 20 = 40.

800 ÷ 40 = ?

I know 40 × ☐ = 800.

So, 800 ÷ 40 = ☐.

8000 ÷ 200 = ?

I know 200 × ☐ = 8000.

So, 8000 ÷ 200 = ☐.

800 ÷ 400 = ?

I know 400 × ☐ = 800.

So, 800 ÷ 400 = ☐.

20. Grace said, "When I divide problems like 1800 ÷ 30, I think about a multiplication sentence. I think:

30 × ? = 1800
30 × 60 = 1800
so, 1800 ÷ 30 = 60."

Write a multiplication sentence that can help you solve each division problem.

Follow the example: 1800 ÷ 600 = ?

600 × 3 = 1800

1800 ÷ 600 = 3

A. 1200 ÷ 40 = ?

40 × ☐ *= 1200*

B. 1200 ÷ 400 = ?

C. 350 ÷ 70 = ?

D. 3500 ÷ 70 = ?

Name _____ Date _____

E. 3000 ÷ 60 = ?

_____

_____

F. 30,000 ÷ 600 = ?

_____

_____

G. 640 ÷ 80 = ?

_____

_____

H. 6400 ÷ 80 = ?

_____

_____

21. Use mental math to solve the division problems.

A. 648 ÷ 80 = ?

B. 4902 ÷ 70 = ?

C. Explain your mental math strategy for Question 21B.

Using Multiplication to Divide

Self-Check: Questions 22–23

22. Fill in the blanks below to show multiplication number sentences for each of the division sentences.

A. 441 ÷ 7 = 63

_____ × _____ = _____

B. $3\overline{)380}$ 126 R2

_____ = _____ × _____ + _____

Name _____ Date _____

23. Solve the division problems using the given multiplication number sentences.

A. Solve: $5\overline{)380}$

Using: $5 \times 7 = 35$
$5 \times 70 = 350$
$5 \times 6 = 30$

B. Solve: $736 \div 8$

Using: $8 \times 9 = 72$
$8 \times 90 = 720$
$8 \times 100 = 800$
$8 \times 8 = 64$
$8 \times 2 = 16$

Use the Self-Check questions to choose practice with using multiplication to divide.

Workshop Menu			
Can I Do This?	**▲ Working On It!** 	**● Getting It!** 	**■ Got It!** 
Write a division number sentence as a multiplication number sentence.	**Question 24**	**Question 25**	**Questions 25–26**
Use multiplication facts to help me divide.	**Questions 27–28**	**Questions 27–29**	**Questions 27, 29–30**

▲ **24.** For each division number sentence, fill in the blanks to complete the related multiplication number sentence.

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

$9 \times$ _____ = _____

B. $185 \div 5 = 37$

_____ $= 37 \times$ _____

C. $368 \div 8 = 46$

_____ $\times$ _____ = _____

D. $370 \div 8 = 46\text{R}2$

_____ $= 8 \times$ _____ + _____

Name _____ Date _____

25. For each division number sentence, write the related multiplication number sentence.

A. 260 ÷ 4 = 65

_____ × _____ = _____

B. $6\overline{)685}$ 114 R1

_____ = _____ × _____ + _____

C. 260 ÷ 4 = 65

_____

D. $125\overline{)780}$ 6 R30

_____

26. Write each number sentence below as a division number sentence.

A. 833 = 6 × 138 + 5

_____

B. 465 = 9 × 51 + 6

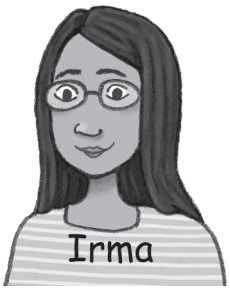
_____

C. Can you write a different division number sentence for Question 26B?

Name _____ Date _____

27. Mrs. Dewey wrote this problem on the board.

Solve: $285 \div 5$
Using: $5 \times 5 = 25$
$5 \times 50 = 250$
$5 \times 7 = 35$



Irma solved the problem this way:

"First I wrote $285 \div 5$ as a multiplication sentence.

$$5 \times ? = 285$$

I know $5 \times 50 = 250$. That leaves 35 left to divide. I can use $5 \times 7 = 35$. Then I'll have none left over. So my answer is $50 + 35 = 85$."

A. Is Irma's answer reasonable? Explain your thinking.

B. Where did Irma make a mistake?

C. What should the answer be?

28. Solve the division problems using the given multiplication number sentences.

A. Solve: $186 \div 6$
Using: $1 \times 6 = 6$
$3 \times 6 = 18$
$30 \times 6 = 180$

B. Solve: $4\overline{)292}$
Using: $4 \times 7 = 28$
$4 \times 70 = 280$
$4 \times 3 = 12$

Name _____ Date _____

29. Solve the division problems using the given number sentences. Circle the quotient.

A. Solve: $9\overline{)684}$

Using:
$9 \times 7 = 63$
$9 \times 70 = 630$
$9 \times 8 = 72$
$9 \times 80 = 720$
$9 \times 4 = 36$
$9 \times 6 = 54$

B. Solve: $896 \div 8$

Using:
$1 \times 8 = 8$
$10 \times 8 = 80$
$100 \times 8 = 800$
$2 \times 8 = 16$

30. Use multiplication and division fact families to solve the division problems. Show the number sentences you used and explain your reasoning. Circle the quotient.

A. $735 \div 5$

B. $8\overline{)3226}$