Exploring Missing Factors

A = | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |

B = | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Complete the puzzles and number sentences. Use one stamp from Group A and one from Group B.

1

×	A	B	
	20		
3			84

$3 \times$ _____ $= 84$

2

×	A	B	
		2	
5	200		210

$5 \times$ _____ $= 210$

3

×	A	B	
		7	
6	420		462

$6 \times$ _____ $= 462$

4

| ×	A	B	
		7	
10			170
4	40		
14		98	238

Test Prep

5 The Haskell family has been driving at 60 miles per hour for three hours. They still have 45 miles to go before arriving at the beach. How many miles is the whole trip to the beach? Explain how you found the answer.

_____

_____

_____

Connecting Multiplication and Division

1 Each of these rectangles should be labeled with its area (inside) and the lengths of its sides. Fill in the missing values.

9	12	[ ]
6 [ ]	7 [ ]	5 [50]
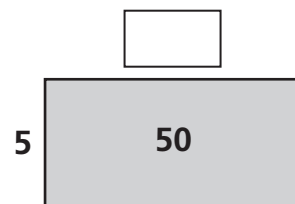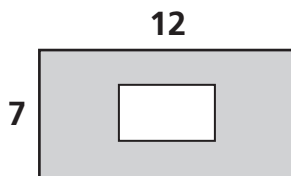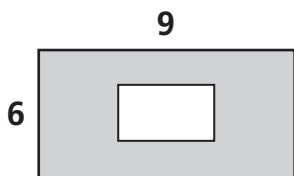
2 Fill in the missing numbers.

×	7
9	

×	7
6	42

$9\overline{)8\ 1}$

$11\overline{)1\ 1\ 0}$

$12\overline{)}^{1\ 2}$

$10\overline{)1\ 4\ 0}$

$13\overline{)2\ 6\ 0}$

3 Use each problem to help you with related problems.

$12\overline{)2\ 4}$

$12\overline{)1\ 2\ 0}$

$12\overline{)1\ 4\ 4}$ → $6\overline{)1\ 4\ 4}$ → $6\overline{)2\ 8\ 8}$

$11\overline{)}^{1\ 0}$ → $11\overline{)2\ 2\ 0}$ → $11\overline{)}^{3\ 0}$ → $22\overline{)3\ 3\ 0}$
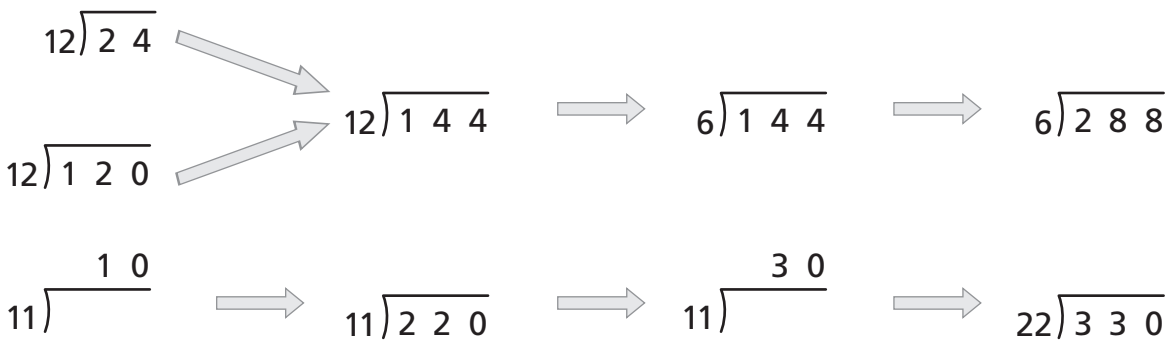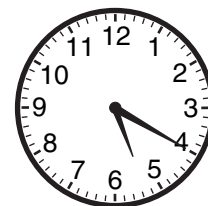
Test Prep

4 Fifteen minutes after the time shown on the clock, Marcie began dinner. She finished dinner at 6:10 P.M. How long did she spend eating dinner?

A. 25 minutes **C.** 35 minutes

B. 30 minutes **D.** 40 minutes

Dividing Using Multiplication and the Area Model

This time there are nineteen rows. How many squares are there per row? To make your work easier, list some useful multiples of 19 or use multiples of 20 to estimate.

1

19

$19\overline{)570}$

2

19

$19\overline{)589}$

3

19

$19\overline{)988}$

4

19

$19\overline{)1,995}$

Test Prep

5 Shira has less than 500 pennies. She can divide them evenly into 2 piles, 3 piles, 4 piles, 5 piles, 6 piles, or 7 piles. How many pennies does she have?

A. 240   **C.** 350

B. 300   **D.** 420

Recording the Steps in Division

1 Complete the table of multiples of 27.

×	1	2	4	5	8	10	20	40	50	80
27										

2 Complete the area model and division record.

tens   tens   ones   ones

27

TOTAL = 972

Summary: 27) 9 7 2

27) 9 7 2   Total Tiles

− 5 4 0

4 3 2   Tiles Left

− 2 7 0

1 6 2   Tiles Left

− 1 3 5

2 7   Tiles Left

− 2 7

0   Tiles Left

3 Solve these problems on a separate sheet of paper.

27) 6 2 1   27) 9 1 8   27) 2, 1 8 7   27) 1, 8 0 9

Test Prep

4 Hamburgers come in packages of 6, and hamburger buns come in packages of 8. If Shane buys 5 packages of hamburgers and enough buns, what is the least number of buns he will have left? Explain how you know.

_____

_____

Dividing and Recording Division Efficiently

1 Complete the table of multiples of 31.

×	1	2	3	4	5	6	7	8	9
31									

2 Complete the area model and division record.

hundreds   tens   ones

31

TOTAL = 4,495

Summary: 31) 4, 4 9 5

31) 4, 4 9 5 Total Tiles
−3, 1 0 0
1, 3 9 5 Tiles Left
−1, 2 4 0
1 5 5 Tiles Left
− 1 5 5
0 Tiles Left

3 Solve these problems on a separate sheet of paper.

31) 6 5 1   31) 8 9 9   31) 1, 2 0 9   31) 1, 7 6 7

Test Prep

4 Which of these problems has the greatest quotient? Try to figure this out without actually calculating the quotients.

A. 27) 9 7 2   C. 27) 9 4 5

B. 36) 9 7 2   D. 36) 9 0 0

5 Which of these problems has the greatest divisor?

A.   4 0
■) 8 0 0

C.   5 0
■) 8 0 0

B.   4 1
■) 8 2 0

D.   3 2
■) 8 0 0

Using Multiplication to Check Division

1 Complete the table of multiples of 47¢, or $0.47. Save work by doubling and adding.

×	1	2	3	4	5	6	7	8	9
47¢	$0.47	$0.94	$1.41						

Use the multiples to compute the cost of different numbers of items that cost 47¢ each.

2 40 at 47¢ each | $ 18.80

5 at 47¢ each | $

45 at 47¢ each | $

3 30 at 47¢ each | $ 14.10

6 at 47¢ each | $

36 at 47¢ each | $

4 20 at 47¢ each | $

6 at 47¢ each | $

26 at 47¢ each | $

5 90 at 47¢ each | $

9 at 47¢ each | $

99 at 47¢ each | $

How many 47¢ items can be bought for the three amounts shown below? Divide to find out. If you need more room, do the work on a separate sheet of paper, and write the summaries here.

6

$0.47)$ 7. 9 9

7

$0.47)$ 1 6. 9 2

8

$0.47)$ 2 1. 1 5

Test Prep

9 A large cardboard box is sitting on a table. The area of one side of the box is 3 square feet. The height of the box is 3 feet. Mark all statements that could be true.

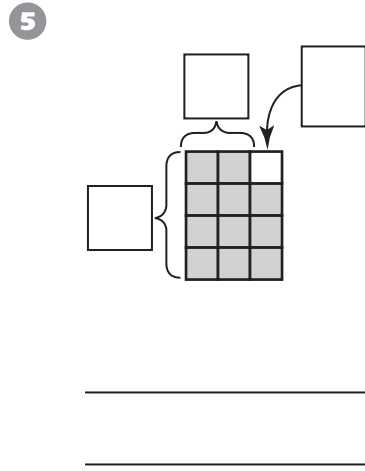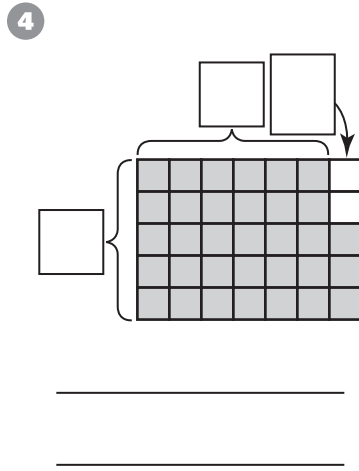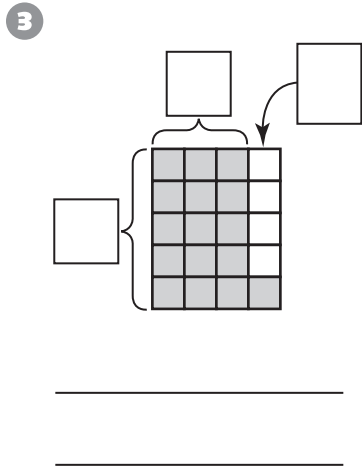**A.** The volume is 9 square feet.

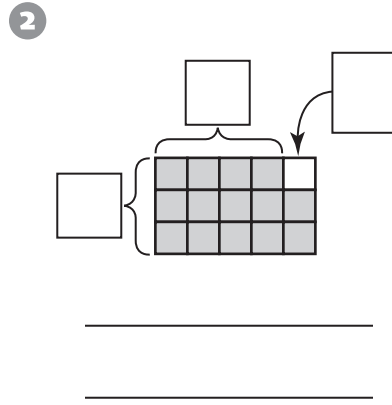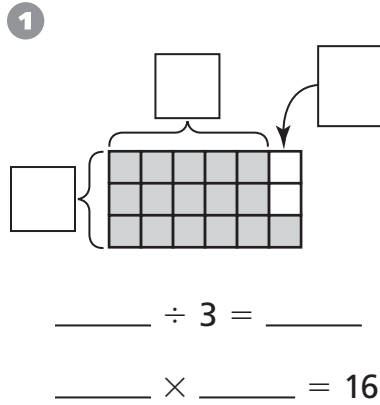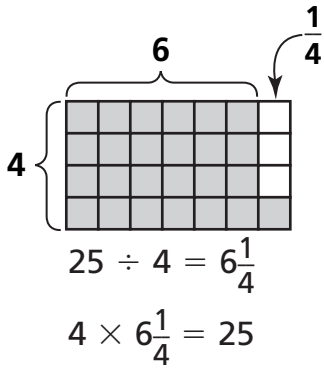**B.** The box is a cube.

C. The volume is $4\frac{1}{2}$ cubic feet.

D. The dimensions of the base are 3 feet by 1 foot.

Investigating Remainders

Look at the example to see how it is labeled. Fill in the missing numbers and number sentences for the other area models.

EXAMPLE

6 $\frac{1}{4}$

4

$25 \div 4 = 6\frac{1}{4}$

$4 \times 6\frac{1}{4} = 25$

1

_____ ÷ 3 = _____

_____ × _____ = 16

2

_____

_____

3

_____

_____

4

_____

_____

5

_____

_____

Test Prep

6 Ben bought 4 packets of stamps. Each packet had 100 stamps in it. He mounted the same number of stamps on each of 5 pages. How many stamps did he mount on each page? Explain how you know.

_____

_____

Interpreting Remainders in Word Problems

Read the stories and solve the problems by drawing a diagram or writing a record. What do you do about the remainder—ignore it or include it as a fraction or decimal?

1 You would not believe how hungry Lydia, Arthur, Ray, and Katy are today! If they share their 5 small pizzas equally, how much pizza will each get? _____

What should you do with the remainder? _____

2 Graham is unloading a box of twelve dozen paperback books onto a bookshelf. Each shelf can hold 25 books. How many shelves will these books completely fill? _____

What should you do with the remainder? _____

Test Prep

3 If there are 7 yards of ribbon in a full roll, how many feet of ribbon are on 5 full rolls?

A. 35   **C.** 105

B. 12   **D.** 21

4 Which would give the best estimate for 77×93?

A. 80×100 **C.** 70×100

B. 70×90 **D.** 80×90

Another Option for Interpreting Remainders

**Solve. Decide what to do when there is a remainder—
ignore it (round down), include it as a fraction or a
decimal, or round up. Show your work.**

1 Some mini-vans can carry 7 people. How many 7-person
mini-vans will be needed to take 18 people to a museum?

Solution: _____ mini-vans

What should you do about the remainder? _____

---

2 There are 350 seats in the auditorium where the fifth-grade
graduation will be held. If each of the 58 fifth graders gets an
equal number of tickets, how many will each fifth grader get?

Solution: _____ tickets

What should you do about the remainder? _____

---

3 A class of fifth graders sold homemade cheese pizzas
as a fundraiser. They sold 20 pizzas and made $165.
If the price of each pizza was the same, how much
did each pizza cost?

Solution: _____

What should you do about the remainder? _____

Test Prep

4 Alvin had fewer than 100 pennies. He found he could divide
them evenly into 2 piles, 3 piles, 4 piles, 5 piles, or 6 piles.
How many pennies did he have? Explain how you know.

_____

_____