	LESSON 3.4b Dividend in the House	6.NS.2 6.NS.3
Objective	Dividing with Surface Area and Volume	<b>S</b>
	Warm-Up	
Calculate ead	ch quotient.	
1. 328 ÷ 7	2. 1381 ÷ 26	

3. 954 ÷ 11

4. 3383 ÷ 54



You have seen how to divide decimals by whole numbers. Let's think about how to divide decimals by decimals.

1. Look at these division problems.



70 560

700 5600

7000 56,000

- a. How are the divisors and dividends in the last three problems related to the first problem?
- b. Calculate all four quotients. What do you notice about them?

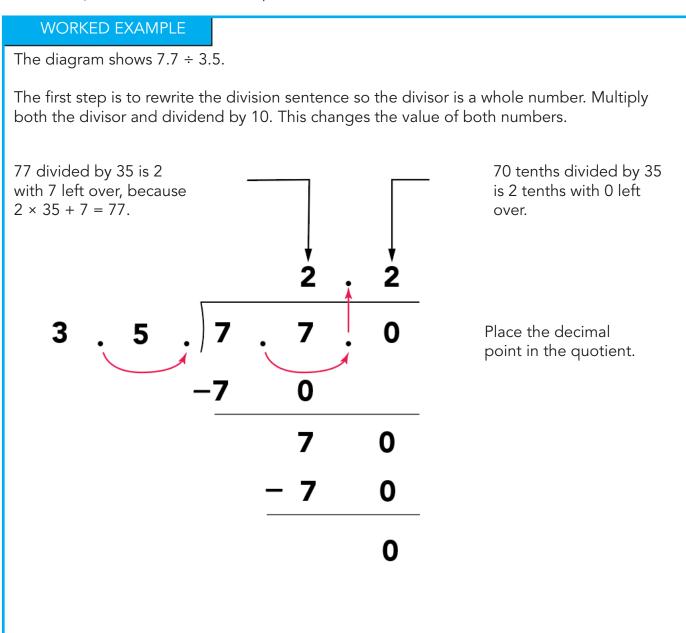
c. What happens to the quotient when the dividend and divisor are multiplied by the same number?

2. Which of the division expressions shown have the same quotient as 475 ÷ 25? How do you know? a. 4.75 ÷ 0.25 b. 47.5 ÷ 0.025

c. 0.475 ÷ 0.25

d. 0.0475 ÷ 0.0025

Let's investigate an algorithm for dividing a decimal by a decimal. You already know how to divide a decimal by a whole number. You also know that if you multiply or divide both the dividend and the divisor by the same number, the quotient remains the same.



3. Examine the worked example.

a. Explain how the worked example shows that  $\frac{7.7}{3.5} = \frac{77}{35}$ 

b. Why does the diagram show subtracting 70 from the 77 in the dividend?

c. What does 70 – 70 represent in the diagram?

4. Rewrite each division sentence so the divisor is a whole number. Then calculate the quotient using long division.

a. 59.5 ÷ 0.1 b. 0.0145 ÷ 0.5 c. 19.36 ÷ 3.2





Let's apply what you have learned about decimal operations to solve problems with volume and surface area.

- 1. The surface area for a cube is given. Calculate the area of each face of the cube.
- a. 36.45 square inches
- b. 768 square feet

c. 59.94 square centimeters

- 2. Marjorie uses a loaf pan to make cornbread. The pan is 8.5 inches long, 4.5 inches wide, and 2.5 inches deep.
- a. The pan has a volume of approximately 6.6 cups. What is the approximate volume of each cup in cubic inches?
- Estimate and then calculate your answer. Show your work.

b. The cornbread Marjorie makes fills only half the depth of the loaf pan. How much cornbread does Marjorie make? Give your answer in cups and cubic inches.



A Short Long Division Activity

Use the standard algorithm to determine each quotient.

1. 5168 ÷ 646

2. 331.25 ÷ 53

3. 9.44 ÷ 2.95

4. 6.85 ÷ 0.5

6.  $10.4 \div 2.6 = 4$ 

For each division statement given, write two division statements that have the same quotient.

 $5.50.32 \div 7.4 = 6.8$ 



Objective

Dividing with Surface Area and Volume

## Practice

Estimate each quotient. Then calculate the quotient using long division. Round to the nearest hundredth.

1. 51.68 ÷ 8	2. 93.45 ÷ 6.23	3. 29.988 ÷ 2.04	4. 38 ÷ 7
5. 49.7 ÷ 25.3	6. 118 ÷ 26	7. 24.4 ÷ 8.3	8. 603 ÷ 98

## Stretch

The volume of the trapezoidal prism is 1279.152 cubic feet.

Determine the height of the trapezoid base.

