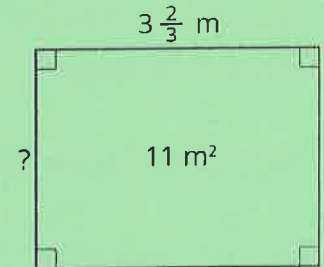NAME   DATE   PERIOD

Unit 4, Lesson 13: Rectangles with Fractional Side Lengths

1.   a. Find the unknown side length of the rectangle if its area is 11 m². Show your reasoning.

$3\frac{2}{3}$ m

? | 11 m²

   b. Check your answer by multiplying it by the given side length ($3\frac{2}{3}$). Is the resulting product 11? If not, revisit your work for the first question.

2. A worker is tiling the floor of a rectangular room that is 12 feet by 15 feet. The tiles are square with side lengths $1\frac{1}{3}$ feet. How many tiles are needed to cover the entire floor? Show your reasoning.

3. A television screen has length $16\frac{1}{2}$ inches, width w inches, and area 462 square inches. Select **all** equations that represent the relationship of the side lengths and area of the television.

   A. $w \cdot 462 = 16\frac{1}{2}$

   B. $16\frac{1}{2} \cdot w = 462$

   C. $462 \div 16\frac{1}{2} = w$

   D. $462 \div w = 16\frac{1}{2}$

   E. $16\frac{1}{2} \cdot 462 = w$
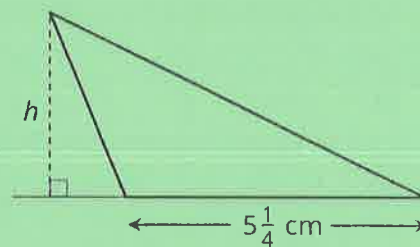
NAME   DATE   PERIOD

Unit 4, Lesson 14: Fractional Lengths in Triangles and Prisms

1. Clare is using little wooden cubes with edge length $\frac{1}{2}$ inch to build a larger cube that has edge length 4 inches. How many little cubes does she need? Explain your reasoning.

2. The triangle has an area of $7\frac{7}{8}$ cm^2 and a base of $5\frac{1}{4}$ cm.

   What is the length of h? Explain your reasoning.

3.   a. Which of the following expressions can be used to find how many cubes with edge length of $\frac{1}{3}$ unit fit in a prism that is 5 units by 5 units by 8 units? Explain or show your reasoning.

   i. $(5 \cdot \frac{1}{3}) \cdot (5 \cdot \frac{1}{3}) \cdot (8 \cdot \frac{1}{3})$

   ii. $5 \cdot 5 \cdot 8$

   iii. $(5 \cdot 3) \cdot (5 \cdot 3) \cdot (8 \cdot 3)$

   iv. $(5 \cdot 5 \cdot 8) \cdot (\frac{1}{3})$

   b. Mai says that we can also find the answer by multiplying the edge lengths of the prism and then multiplying the result by 27. Do you agree with her statement? Explain your reasoning.

4. A builder is building a fence with $6\frac{1}{4}$-inch-wide wooden boards, arranged side-by-side with no gaps. How many boards are needed to build a fence that is 150 inches long? Show your reasoning.

Unit 4, Lesson 15: Volume of Prisms

1. A pool in the shape of a rectangular prism is being filled with water. The length and width of the pool is 24 feet and 15 feet. If the height of the water in the pool is $1\frac{1}{3}$ feet, what is the volume of the water in cubic feet?

2. A rectangular prism measures $2\frac{2}{5}$ inches by $3\frac{1}{5}$ inches by 2 inch.

   a. Priya said, "It takes more cubes with edge length $\frac{2}{5}$ inch than cubes with edge length $\frac{1}{5}$ inch to pack the prism." Do you agree with Priya's statement? Explain or show your reasoning.

   b. How many cubes with edge length $\frac{1}{5}$ inch fit in the prism? Show your reasoning.

   c. Explain how you can use your answer in the previous question to find the volume of the prism in cubic inches.

3.   a. Here is a right triangle. What is its area?

   b. What is the height h for the base that is $\frac{5}{4}$ units long? Show your reasoning.
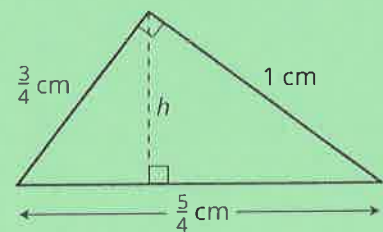
(from Unit 4, Lesson 14)

4. To give their animals essential minerals and nutrients, farmers and ranchers often have a block of salt—called "salt lick"—available for their animals to lick.

    a. A rancher is ordering a box of cube-shaped salt licks. The edge lengths of each salt lick are $\frac{5}{12}$ foot. Is the volume of one salt lick greater or less than 1 cubic foot? Explain your reasoning.
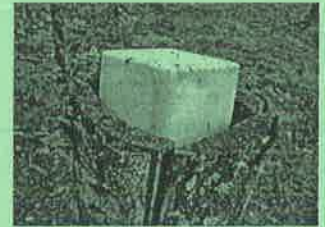
    b. The box that contains the salt lick is $1\frac{1}{4}$ feet by $1\frac{2}{3}$ feet by $\frac{5}{6}$ feet. How many cubes of salt lick fit in the box? Explain or show your reasoning.

5.   a. How many groups of $\frac{1}{3}$ inch are in $\frac{3}{4}$ inch?

    b. How many inches are in $1\frac{2}{5}$ groups of $1\frac{2}{3}$ inches?

(from Unit 4, Lesson 12)

6. Here is a table that shows the ratio of flour to water in an art paste. Complete the table with values in equivalent ratios.

cups of flour	cups of water
1	$\frac{1}{2}$
4	
	3
$\frac{1}{2}$	