Fractional Lengths & Area

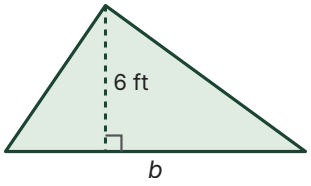
ANSWER KEY • Amplify Alignment: Grade 6 Accelerated, Unit 3, Lesson 10

1. A rectangular rug has a length of $12\frac{1}{2}$ feet, a width of w feet, and an area of 75 square feet. Select all the equations that represent the relationship.

- ☑ **A.** $12\frac{1}{2} \cdot w = 75$
- ☑ **B.** $75 \div 12\frac{1}{2} = w$
- ☑ **C.** $75 \div w = 12\frac{1}{2}$
- ☐ **D.** $w \cdot 75 = 12\frac{1}{2}$
- ☐ **E.** $w \div 75 = 12\frac{1}{2}$
- ☐ **F.** $12\frac{1}{2} \cdot 75 = w$

What is the width? **6 feet**

2. This triangle has a height of 6 feet and an area of 21 square feet. Select all the equations that represent the relationship.



- ☑ **A.** $21 = \frac{1}{2} \cdot b \cdot 6$
- ☑ **B.** $3 \cdot b = 21$
- ☐ **C.** $6 \cdot b = 21$
- ☑ **D.** $21 \div b = 3$
- ☐ **E.** $b \div 6 = 21$

3. The area of a rectangle is 15 square feet. Its width is $2\frac{1}{2}$ feet. What is its length? Show your thinking.

$15 \div 2\frac{1}{2} = 15 \cdot \frac{2}{5} = 6$ feet

4. The area of a triangle is 20 square centimeters. Its base is $6\frac{2}{3}$ centimeters. What is its height? Show your thinking.

$20 = \frac{1}{2} \cdot \frac{20}{3} \cdot h$, so $20 = \frac{10}{3} \cdot h$. $h = 20 \div \frac{10}{3} = 6$ cm

5. Nina is tiling a wall that is 9 feet by 6 feet. The tiles are squares with a side length of $1\frac{1}{2}$ feet. How many tiles does she need to cover the wall? Show or explain your thinking.

$9 \div 1\frac{1}{2} = 6$ tiles across and $6 \div 1\frac{1}{2} = 4$ tiles down. $6 \times 4 = 24$ tiles

6. The area of a triangle is $\frac{3}{8}$ square inch. Its height is $\frac{3}{4}$ inch. What is the length of its base? Show your thinking.

$\frac{3}{8} = \frac{1}{2} \cdot b \cdot \frac{3}{4}$, so $\frac{3}{8} = \frac{3}{8} \cdot b$. $b = 1$ inch

7. Ty wrote the equation $\frac{5}{6} = l \cdot \frac{1}{3}$ to find the missing length of a rectangle. Solve for l.

$l = \frac{5}{6} \div \frac{1}{3} = \frac{5}{6} \cdot 3 = 2\frac{1}{2}$ feet

8. A triangle has a height of $4\frac{1}{2}$ yards and an area of 9 square yards. Rita wrote the equation $\frac{1}{2} \cdot b \cdot 4\frac{1}{2} = 9$ to find the base. Is Rita's equation correct? If yes, solve it. If no, write and solve a new equation.

Yes. $\frac{1}{2} \cdot 4\frac{1}{2} = \frac{9}{4}$, so $\frac{9}{4} \cdot b = 9$. $b = 9 \div \frac{9}{4} = 4$ yards