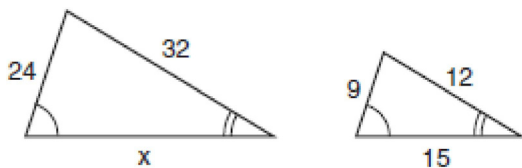


**G.G.45: Similarity 3: Investigate, justify, and apply theorems about similar triangles**

- 1 A triangle has sides whose lengths are 5, 12, and 13. A similar triangle could have sides with lengths of

- 1) 3, 4, and 5
- 2) 6, 8, and 10
- 3) 7, 24, and 25
- 4) 10, 24, and 26

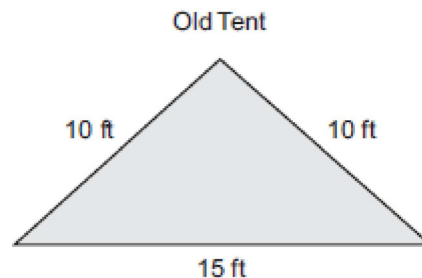
- 2 The accompanying diagram shows two similar triangles.



Which proportion could be used to solve for  $x$ ?

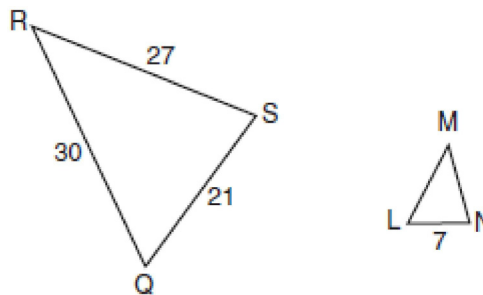
- 1)  $\frac{x}{24} = \frac{9}{15}$
- 2)  $\frac{24}{9} = \frac{15}{x}$
- 3)  $\frac{32}{x} = \frac{12}{15}$
- 4)  $\frac{32}{12} = \frac{15}{x}$

- 3 The Rivera family bought a new tent for camping. Their old tent had equal sides of 10 feet and a floor width of 15 feet, as shown in the accompanying diagram.

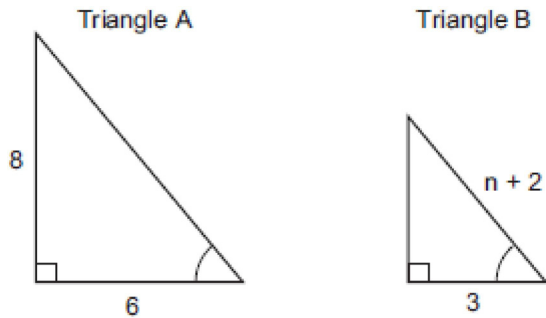


If the new tent is similar in shape to the old tent and has equal sides of 16 feet, how wide is the floor of the new tent?

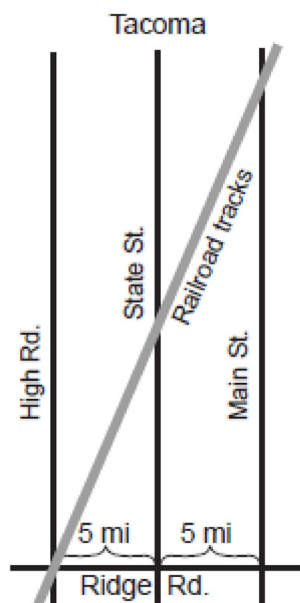
- 4 In the accompanying diagram,  $\triangle QRS$  is similar to  $\triangle LMN$ ,  $RQ = 30$ ,  $QS = 21$ ,  $SR = 27$ , and  $LN = 7$ . What is the length of  $ML$ ?



- 5 In the accompanying diagram, triangle  $A$  is similar to triangle  $B$ . Find the value of  $n$ .



- 6 The accompanying diagram shows a section of the city of Tacoma. High Road, State Street, and Main Street are parallel and 5 miles apart. Ridge Road is perpendicular to the three parallel streets. The distance between the intersection of Ridge Road and State Street and where the railroad tracks cross State Street is 12 miles. What is the distance between the intersection of Ridge Road and Main Street and where the railroad tracks cross Main Street?



**G.G.45: Similarity 3: Investigate, justify, and apply theorems about similar triangles**  
**Answer Section**

1 ANS: 4 REF: 060307a

2 ANS: 3 REF: 010410a

3 ANS:

$$24. \frac{15}{10} = \frac{x}{16}$$

$$x = 24$$

REF: 060024a

4 ANS:

$$10. \frac{30}{21} = \frac{x}{7}$$

$$x = 10$$

REF: 010931a

5 ANS:

3. Triangle A is a multiple of the 3, 4, 5 triangle. Triangle B is the 3, 4, 5 triangle.

$$n + 2 = 5$$

$$n = 3$$

REF: 060230a

6 ANS:

$$24. \frac{15}{10} = \frac{x}{16}$$

$$x = 24$$

REF: 080021a