Practice 3-5

Proportions and Similar Figures

Each pair of figures is similar. Find the length of x.

1. \[ \frac{15}{9} = \frac{x}{12} \]
2. \[ \frac{x}{10} = \frac{7}{6} \]
3. \[ \frac{5}{2.5} = \frac{x}{3} \]
4. \[ \frac{x}{4.1} = \frac{3.9}{4.2} \]
5. \[ \frac{6}{8} = \frac{x}{4} \]
6. \[ \frac{10}{x} = \frac{2}{4} \]
7. \[ \frac{4}{3} = \frac{x}{4} \]
8. \[ \frac{12}{4} = \frac{x}{4} \]

Use a proportion to solve.

9. \( \triangle ABC \) is similar to \( \triangle XYZ \). The length \( AB \) is 10. The length \( BC \) is 7. Find the length \( XY \) if the length \( YZ \) is 14.

10. Marty has a scale model of a car. The scale is 1 in. : 32 in. If the model is 6.75 in. long, how long is the actual car?

11. A blueprint scale is 1 in. : 12 ft. The width of a building is 48 ft. What is the width of the building on the blueprint?

12. Angie is using similar triangles to find the height of a tree. A stick that is 5 ft tall casts a shadow that is 4 ft long. The tree casts a shadow that is 22 ft long. How tall is the tree?

13. \( \triangle ABC \) is similar to \( \triangle XYZ \). The length \( AC \) is 10. The length \( BC \) is 16. What is the length \( XZ \) if the length \( YZ \) is 12?

14. A map has a scale of 1 in. : 25 mi. Two cities are 175 mi apart. How far apart are they on the map?