

Chapter Test

Form A

Chapter 7

Solve each proportion for x .

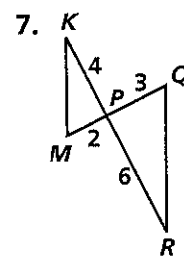
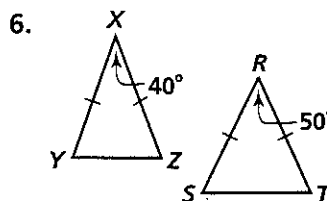
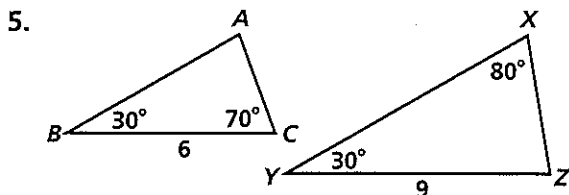
1. $\frac{10}{x} = \frac{5}{14}$

2. $\frac{x}{8} = \frac{3}{19}$

3. $\frac{1}{5} = \frac{9}{x}$

4. $\frac{x}{x+1} = \frac{2}{5}$

Are the triangles similar? If so, write the similarity statement, and name the postulate or theorem that you can use to prove they are similar. If not, write *not similar*.



8. A man 6 ft tall casts a shadow 4 ft long. At the same time, a building casts a shadow 20 ft long. How tall is the building?

9. Find the geometric mean of 3 and 27. If the answer is not a whole number, leave it in simplest radical form.

10. Find the geometric mean of 10 and 18. If the answer is not a whole number, leave it in simplest radical form.

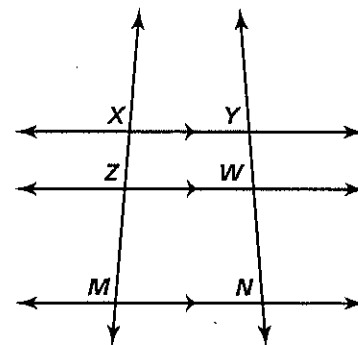
11. Which proportion is true for the figure at the right?

A. $\frac{XY}{ZW} = \frac{ZW}{MN}$

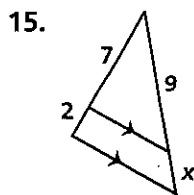
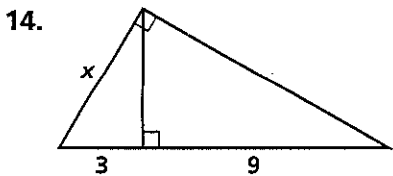
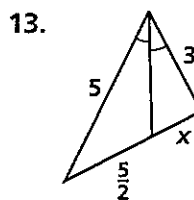
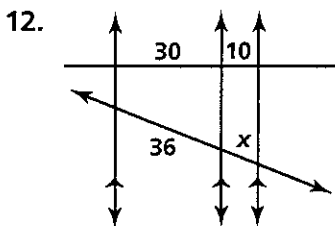
B. $\frac{ZM}{XZ} = \frac{WN}{YW}$

C. $\frac{XZ}{WN} = \frac{YW}{ZM}$

D. $\frac{XM}{MN} = \frac{YN}{MN}$



Find the value of x .



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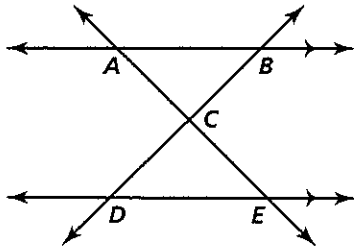
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Chapter Test (continued)

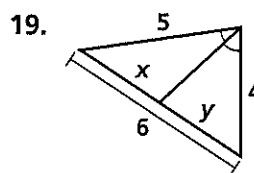
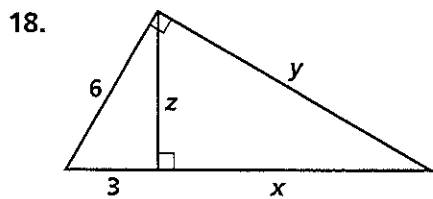
Form A

Chapter 7

16. Draw a rectangle $ABCD$. Then draw a pair of similar triangles whose sides are on or within $ABCD$.
17. In the diagram below, explain how you know that $\triangle ABC \sim \triangle EDC$.



Find the values of the variables.



20. $\triangle RST \sim \triangle XYZ$ and $RS = \frac{3}{2}XY$. Which of the following is true?
- A. The ratio of perimeters of $\triangle RST$ to $\triangle XYZ$ is $\frac{9}{4}$. B. $m\angle R = \frac{3}{2}m\angle X$
- C. The ratio of areas of $\triangle XYZ$ to $\triangle RST$ is $\frac{9}{4}$. D. none of the above
21. Find the length of the altitude to the hypotenuse of a right triangle whose sides have lengths 5, 12, and 13.

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