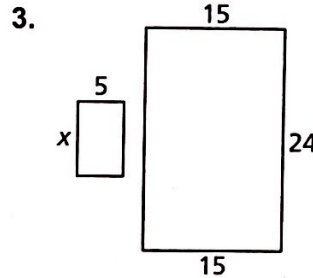
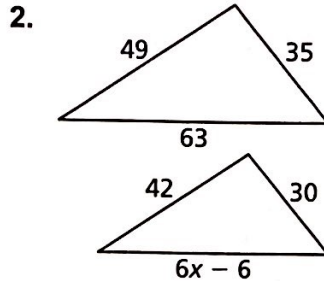
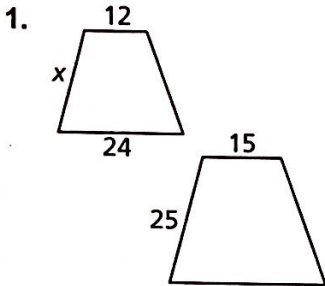


**Chapter 8**

**Test B**

The given polygons are similar. Find the value of  $x$ .



**Answers**

1. 20
2. 10
3. 8
4. 5/6

$\angle C \cong \angle D, \angle A \cong \angle F$

$\angle B \cong \angle E, \triangle ABC \sim \triangle FED$

$\frac{5}{2} \triangle ABC \sim \triangle EFGH$

5. 5/2

$\angle A \cong \angle E, \angle B \cong \angle F$

$\angle C \cong \angle G, \angle D \cong \angle H$

6. 133.64

7. 28

8.  $\triangle ABC \sim$

$\triangle EDC$

AA Similarity

9.  $\triangle BCA \sim$

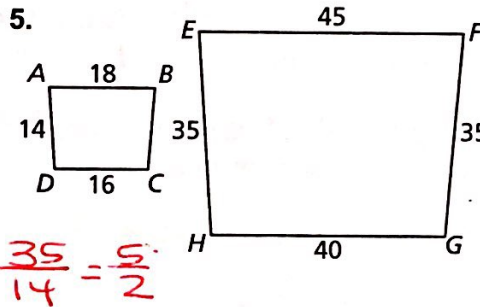
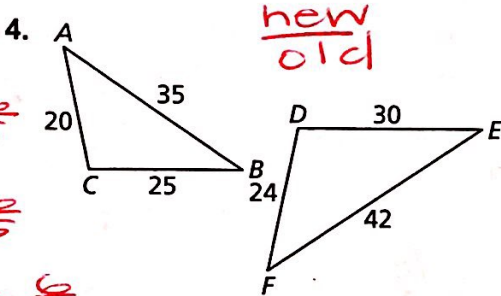
$\triangle ECD$

SAS Similarity

10. no. sides are not all proportional

11. no. you can only prove two sides proportional

Find the scale factor. Then list all the pairs of congruent angles and write the ratios of the corresponding side lengths in a statement of proportionality.



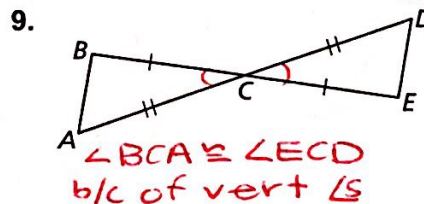
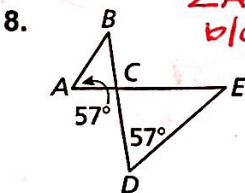
6. Pittsburgh, Pennsylvania and State College, Pennsylvania are 9.8 inches apart on a map that has a scale showing 1.1 inches equal to 15 miles. How far apart are the cities in real life?

$\frac{9.8}{x} = \frac{1.1}{15} = 1.1x = 147$   
 $x = 133.64$

7. A model house is 12 centimeters long. If it was built with a scale factor of 3 centimeters equal to 7 feet, then how long is the house in real life?

$\frac{12}{x} = \frac{3}{7}$   
 $3x = 84$   
 $x = 28$

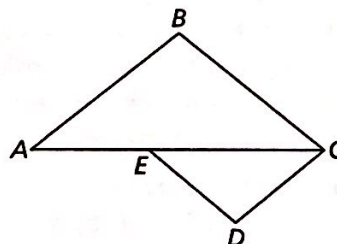
Show that the triangles are similar. Write a similarity statement.



Can the given information be used to prove  $\triangle ABC \sim \triangle EDC$ ? Explain your reasoning.

10.  $ED = 8, DC = 10, EC = 12, AB = 12, BC = 15, AC = 21$

11.  $ED = 7, DC = 9, AB = 10.5, BC = 13.5, m\angle BAC + m\angle BCA = 105^\circ$

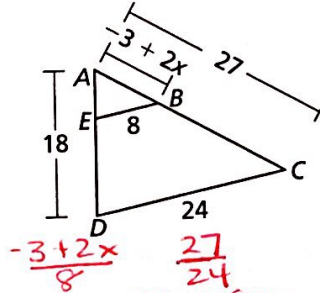
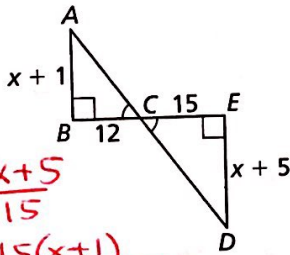
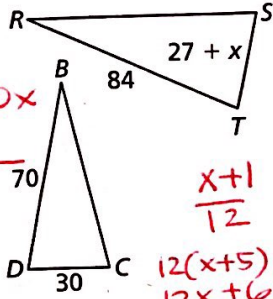


**Chapter 8**

**Test B (continued)**

The triangles in each pair are similar. Find the value of  $x$ .

12.  $\triangle DBC \sim \triangle TRS$     13.  $\triangle ABC \sim \triangle DEC$     14.  $\triangle ABE \sim \triangle ACD$



$\frac{70}{30} = \frac{84}{27+x}$   
 $70(27+x) = 1890 + 70x$   
 $190 - 1890$   
 $530 = 70x$   
 $9 = x$

$\frac{x+1}{12} = \frac{x+5}{15}$   
 $12(x+5) = 15(x+1)$   
 $12x + 60 = 15x + 15$   
 $45 = 3x$      $x = 15$

$\frac{18}{8} = \frac{3+2x}{24}$   
 $216 = -72 + 48x$      $288 = 48x$

**Answers**

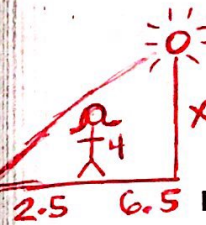
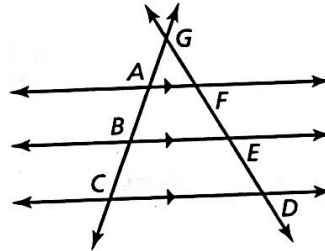
12. 9  
 13. 15  
 14. 6  
 15. 14  
 16. 14.4  
 17. AG  
 18. DE  
 19. FE  
 20. GC  
 21. 6  
 22. 11.2  
 23. 4.5  
 24. 150

15. Your geometry class goes on a field trip to the zoo. If an 18-foot tall tree casts a 9 foot-long shadow, how tall is an adult giraffe that casts a 7-foot shadow?  
 16. A 4-foot tall girl stands 6.5 feet from a lamp post at night. Her shadow from the light is 2.5 feet long. How tall is the lamp post?

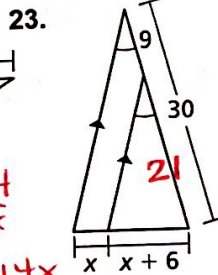
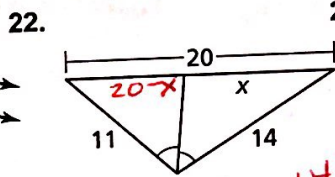
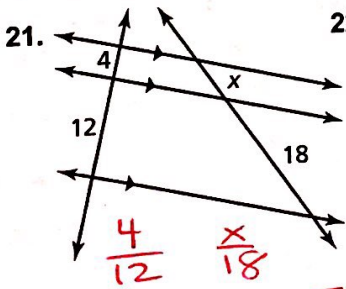
$\frac{18}{9} = \frac{x}{7}$   
 $126 = 9x$   
 $14 = x$

Use the figure to complete the proportion.

17.  $\frac{EF}{FG} = \frac{BA}{?}$     18.  $\frac{CB}{BA} = \frac{?}{EF}$   
 19.  $\frac{AB}{AC} = \frac{?}{FD}$     20.  $\frac{GF}{GD} = \frac{GA}{?}$



Find the value of  $x$ .



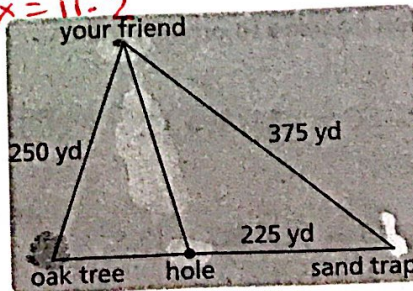
$\frac{4}{2.5} = \frac{x}{9}$   
 $36 = 2.5x$   
 $14.4 = x$

$\frac{4}{12} = \frac{x}{18}$   
 $12x = 72$

$\frac{11}{20-x} = \frac{14}{x}$   
 $11x = 280 - 14x$   
 $25x = 280$   
 $x = 11.2$

$\frac{x}{x+6} = \frac{9}{21}$   
 $21x = 9x + 54$   
 $12x = 54$   
 $x = 4.5$

24. Your friend is hitting a golf ball toward the hole. The line from your friend to the hole bisects the angle formed by the lines from your friend to the oak tree and from your friend to the sand trap. The oak tree is 250 yards from him. The sand trap is 375 yards from him. The hole is 225 yards from the sand trap. How far is the hole from the oak tree?



$\frac{250}{x} = \frac{375}{225}$

$375x = 56250$   
 $375 \quad 375$   
 $x = 150$