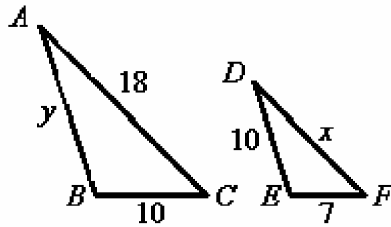
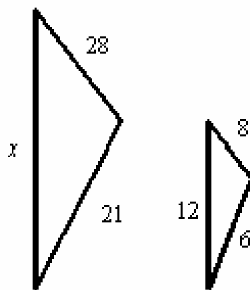


Geometry Mastery Test #6 1st Semester Review 2016

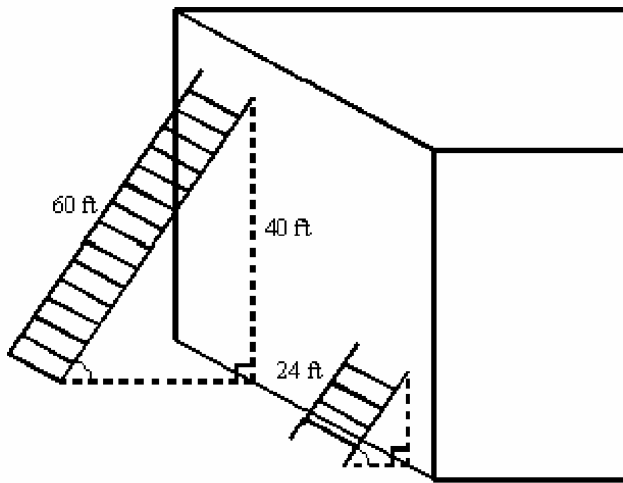
1. If two polygons are SIMILAR, then the corresponding angles must be _____.
2. If two polygons are SIMILAR, then the corresponding sides must be _____.
3. Given that $\triangle ABC \sim \triangle DEF$, solve for x and y .



4. The perimeter of $\triangle PQR$ is 48, $PQ = 18$, $\triangle PQR \sim \triangle STU$, and $ST = 24$. What is the perimeter of $\triangle STU$?
5. A rectangle has a length of 9 mm. A similar rectangle is drawn using a scale of 1:3. What is the length of the second rectangle?
6. The triangles below are similar. Find x .

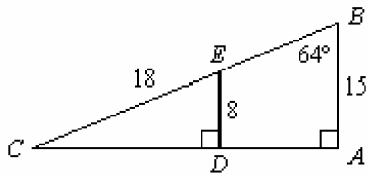


7. Two ladders are leaning against a wall at the same angle as shown.

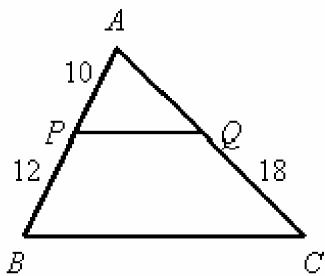


How far up the wall does the shorter ladder reach?

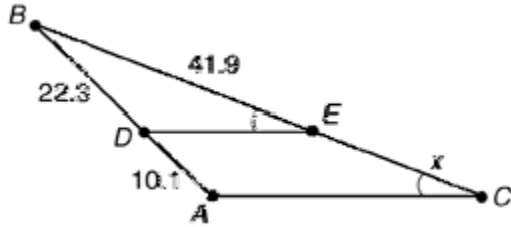
8. Use the figure to find $m\angle CED$. The figure is not drawn to scale.



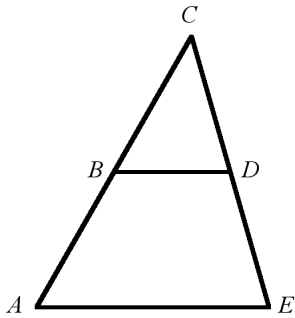
9. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of \overline{AQ} .



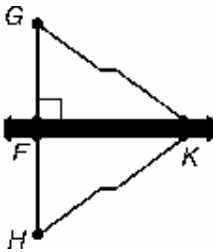
10. Find the value of x to one decimal place.



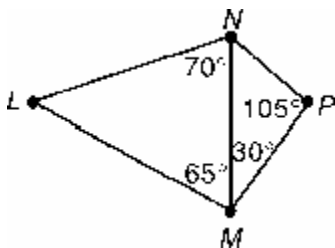
11. Solve for x given $BD = \frac{3}{2}x + 3$ and $AE = 9x + 3$. Assume B is the midpoint of \overline{AC} and D is the midpoint of \overline{CE} .



12. If \overleftrightarrow{KF} is the perpendicular bisector of \overline{GH} , then $\angle KGF \cong$ _____.



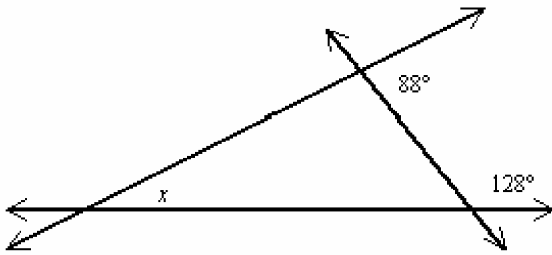
13. Refer to the figure.



The longest segment is _____.

14. Two sides of a triangle have sides 6 and 10. The length of the third side must be greater than _____ and less than _____.

15. Find the value of x :



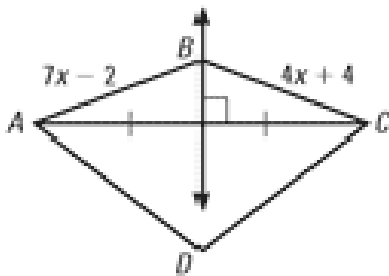
16. Find the values of x and y .



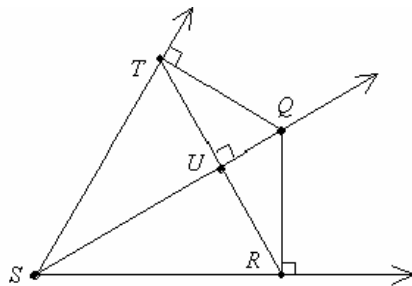
17. Write the equation of the line passing through the point $(6, -2)$ and parallel to the line $y = 9x - 2$.

18. The midpoint of \overline{QR} is $M(7, 6)$. One endpoint is $Q(6, 5)$. Find the coordinates of the other endpoint.

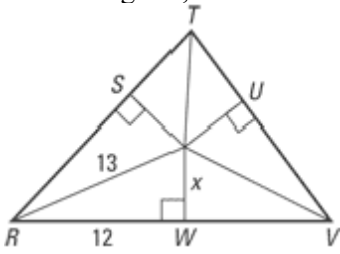
19. Find AB . Is there enough information to show that D lies on the vertical line that passes through B ?



20. Given: \overrightarrow{SQ} bisects $\angle RST$. Find QR if $UT = 35$ and $UQ = 120$. (not drawn to scale)

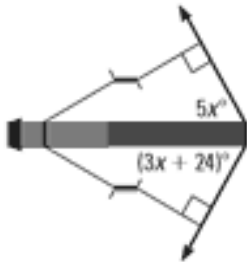


21. In the diagram, X is the incenter of $\triangle RTV$. Find XU .

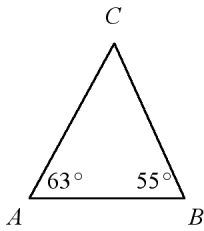


Find the value of x .

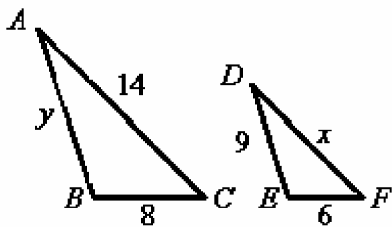
- 22.



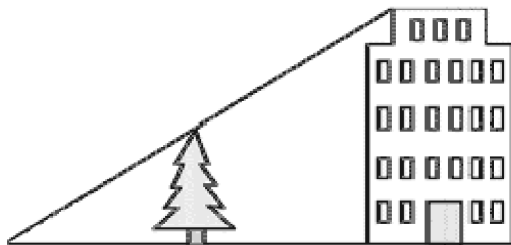
23. Identify the longest side of $\triangle ABC$.



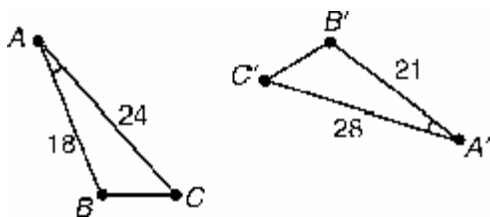
24. Is it possible for a triangle to have sides with the given lengths?
5 cm, 3 cm, 2 cm
25. Given that $\triangle ABC \sim \triangle DEF$, solve for x and y .



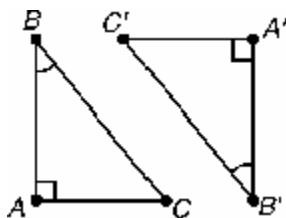
26. Gilbert wants to find the height of the tallest building in his city. He stands 223 feet away from the building. There is a tree 39 feet in front of him, which he knows is 19 feet tall. How tall is the building? (Round to the nearest foot.)



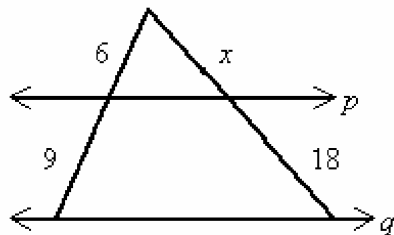
27. In $\triangle UVW$, $UV=8$, $VW=10$, and $WU=13$. In $\triangle QRP$, $RP=24$, $PQ=30$, and $QR=39$. State whether the triangles are similar, and if so, write a similarity statement.
28. In $\triangle PQR$, $PQ=3$, $QR=12$, and $m\angle Q=44^\circ$. In $\triangle BCA$, $CA=12$, $AB=48$, and $m\angle A=44^\circ$. State whether the triangles are similar, and if so, write a similarity statement.
29. State the postulate or theorem that can be used to prove that the two triangles are similar.



30. State the postulate or theorem that can be used to prove that the two triangles are similar.



31. If $p \parallel q$, solve for x .



Other

32. Two sides of a triangle have lengths 14 and 10. What are the possible lengths of the third side x ?

Geometry Mastery Test #6 1st Semester Review 2016 Answer Section

SHORT ANSWER

1. ANS:
congruent

TOP: Lesson 6.1 Use Similar Polygons

2. ANS:
proportional

TOP: Lesson 6.1 Use Similar Polygons

3. ANS:
 $x = 12.6, y = 14.29$

TOP: Lesson 6.1 Use Similar Polygons

4. ANS:
64

TOP: Lesson 6.1 Use Similar Polygons

5. ANS:
3 mm

TOP: Lesson 6.1 Use Similar Polygons

6. ANS:
42

TOP: Lesson 6.1 Use Similar Polygons

7. ANS:
16 ft

TOP: Lesson 6.3 Prove Triangles Similar by AA

8. ANS:
 64°

TOP: Lesson 6.3 Prove Triangles Similar by AA

9. ANS:
15

TOP: Lesson 6.5 Use Proportionality Theorems

10. ANS:
19.0

TOP: Lesson 6.5 Use Proportionality Theorems

11. ANS:

$$\frac{1}{2}$$

TOP: Lesson 5.1 Midsegment Theorem and Coordinate Proof

12. ANS:

$$\angle KHF$$

TOP: Lesson 5.2 Use Perpendicular Bisectors

13. ANS:

$$\overline{ML}$$

TOP: Lesson 5.5 Use Inequalities in a Triangle

14. ANS:

$$4, 16$$

TOP: Lesson 5.5 Use Inequalities in a Triangle

15. ANS:

$$36^\circ$$

TOP: Lesson 4.1 Apply Triangle Sum Properties

16. ANS:

$$x = 36^\circ, y = 72^\circ$$

TOP: Lesson 4.8 Use Isosceles and Equilateral Triangles

17. ANS:

$$y = 9x - 56$$

TOP: Lesson 3.5 Write and Graph Equations of Lines

18. ANS:

$$(8, 7)$$

TOP: Lesson 1.3 Use Midpoint and Distance Formulas

19. ANS:

$$AB = 12; \text{ no}$$

TOP: Lesson 5.2 Use Perpendicular Bisectors

20. ANS:

$$125$$

TOP: Lesson 5.3 Use Angle Bisectors of Triangles

21. ANS:

$$XU = 5$$

TOP: Lesson 5.3 Use Angle Bisectors of Triangles

22. ANS:
12

TOP: Lesson 5.3 Use Angle Bisectors of Triangles

23. ANS:
 \overline{CB}

TOP: Lesson 5.5 Use Inequalities in a Triangle

24. ANS:
no

TOP: Lesson 5.5 Use Inequalities in a Triangle

25. ANS:
 $x = 10.5, y = 12$

TOP: Lesson 6.1 Use Similar Polygons

26. ANS:
109 ft

TOP: Lesson 6.3 Prove Triangles Similar by AA

27. ANS:
similar, $\triangle UVW \sim \triangle RPQ$

TOP: Lesson 6.4 Prove Triangles Similar by SSS and SAS

28. ANS:
similar, $\triangle PQR \sim \triangle CAB$

TOP: Lesson 6.4 Prove Triangles Similar by SSS and SAS

29. ANS:
SAS Similarity Theorem

TOP: Lesson 6.4 Prove Triangles Similar by SSS and SAS

30. ANS:
AA Similarity Postulate

TOP: Lesson 6.4 Prove Triangles Similar by SSS and SAS

31. ANS:
12

TOP: Lesson 6.5 Use Proportionality Theorems

OTHER

32. ANS:
 $4 < x < 24$

TOP: Lesson 5.5 Use Inequalities in a Triangle