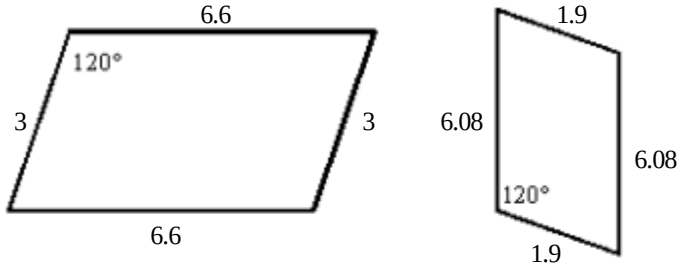
Chapter 8 Test Honors Geometry

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. If $\frac{a}{b} = \frac{5}{3}$, then $3a =$ ____.
   a. $3b$ b. $10b$ c. $5b$ d. $6b$

   Solve the proportion.

2. $\frac{5}{7} = \frac{m}{35}$
   a. $\frac{1}{25}$ b. 5 c. 1 d. 25
3. A map of Australia has a scale of 1 cm to 120 km. If the distance between Melbourne and Canberra is 463 km, how far apart are they on the map, to the nearest tenth of a centimeter?
   a. 0.4 cm b. 3.9 cm c. 38.6 cm d. 55,560 cm
4. Determine whether the figures are similar.



Not drawn to scale

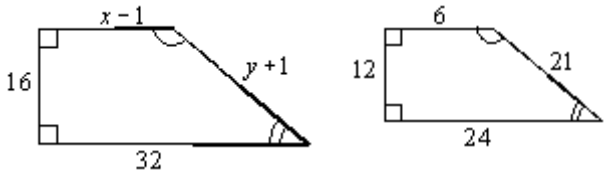
   a. similar
   b. not similar
   c. not enough information

   Are the polygons similar? If they are, write a similarity statement and give the similarity ratio.

5. In ΔRST, $RS = 10$, $RT = 15$, and $m\angle R = 32$. In ΔUVW, $UV = 12$, $UW = 18$, and $m\angle U = 32$.
   a. $\Delta RST \sim \Delta WUV$; $\frac{5}{6}$
   b. $\Delta RST \sim \Delta UVW$; $\frac{5}{6}$
   c. $\Delta RST \sim \Delta VWU$; $\frac{6}{5}$
   d. The triangles are not similar.

   The polygons are similar, but not necessarily drawn to scale. Find the values of *x* and *y*.

6.



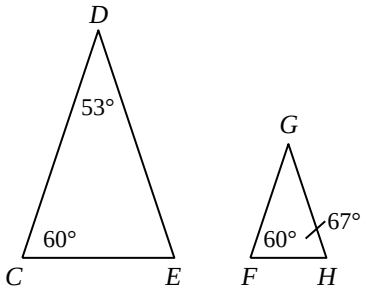
a. $x = \frac{11}{2}, y = \frac{59}{4}$

b. $x = \frac{11}{2}, y = 27$

c. $x = 9, y = \frac{59}{4}$

d. $x = 9, y = 27$

7. Write a similarity statement for the triangles.



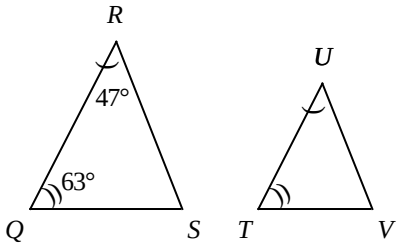
a. $\Delta CDE \sim \Delta FHG$

b. $\Delta CED \sim \Delta FGH$

c. $\Delta CDE \sim \Delta FGH$

d. $\Delta EDC \sim \Delta FGH$

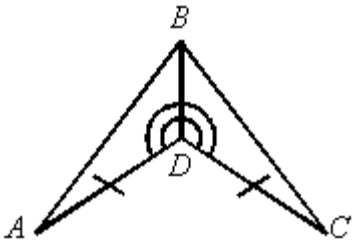
8. $\Delta QRS \sim \Delta TUV$. What is the measure of $\angle V$?



a. 70° b. 110° c. 250° d. 35°

State whether the triangles are similar. If so, write a similarity statement and the postulate or theorem you used.

9.



a. $\Delta ADB \sim \Delta CDB$; SAS

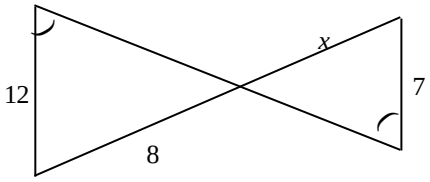
b. $\Delta ABD \sim \Delta CDB$; SAS

c. $\Delta ADB \sim \Delta CDB$; SSS

d. The triangles are not similar.

Explain why the triangles are similar. Then find the value of *x*.

10.



Not drawn to scale

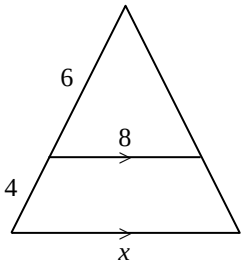
a. SSS Postulate; $10\frac{1}{2}$

b. AA Postulate; $10\frac{1}{2}$

c. SAS Postulate; $4\frac{2}{3}$

d. AA Postulate; $4\frac{2}{3}$

11.



Not drawn to scale

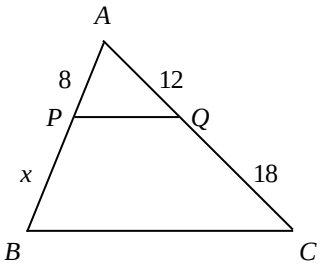
a. SSS Postulate; $5\frac{1}{3}$

b. AA Postulate; $13\frac{1}{3}$

c. SAS Postulate; $13\frac{1}{3}$

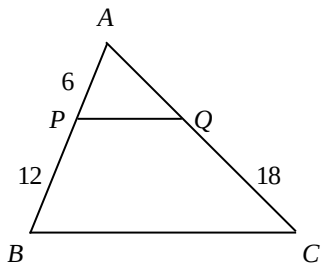
d. AA Postulate; $5\frac{1}{3}$

12. Use the Side-Splitter Theorem to find *x*, given that $\overline{PQ} \parallel \overline{BC}$.



a. 12 b. 6 c. 20 d. 24

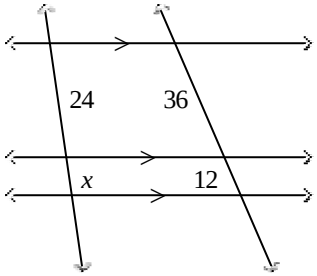
13. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of $\overline{AQ}$. The diagram is not drawn to scale.



a. 11 b. 12 c. 18 d. 9

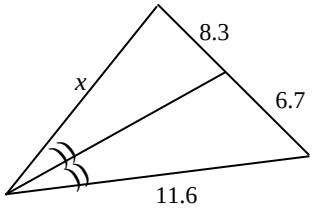
Solve for *x*.

14.



a. 8 b. 12 c. 6 d. 2

15. Find *x* to the nearest tenth.



Not drawn to scale

a. 4.8 b. 14.4 c. 9.4 d. 1.7

Short Answer

Solve the proportion.

16. $\frac{6}{a} = \frac{18}{27}$

17. $\frac{3y - 8}{12} = \frac{y}{5}$

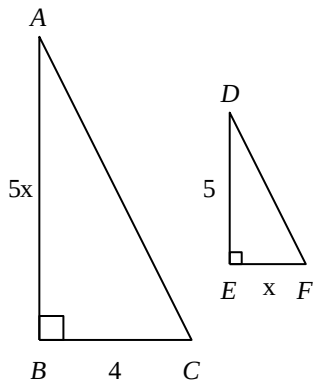
18. On a blueprint, the scale indicates that 6 cm represent 15 feet. What is the length of a room that is 9 cm long and 4 cm wide on the blueprint?

Are the polygons similar? If they are, write a similarity statement and give the similarity ratio.

19. In ΔQRS, $QR = 4$, $RS = 15$, and $m\angle R = 36$. In ΔUVT, $VT = 8$, $TU = 32$, and $m\angle T = 36$.

The polygons are similar, but not necessarily drawn to scale. Find the values of *x* and *y*.

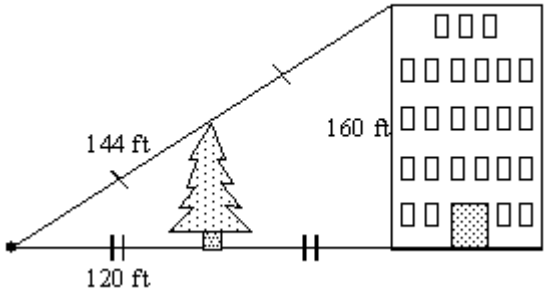
20. Triangles *ABC* and *DEF* are similar. Find the lengths of *AB* and *EF*.



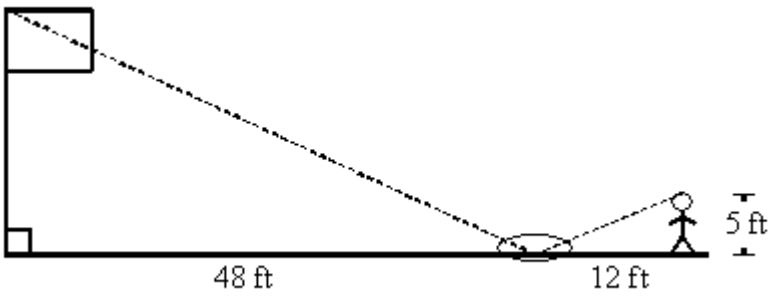
State whether the triangles are similar. If so, write a similarity statement and the postulate or theorem you used.

21. In ΔQRS, $QR = 16$, $RS = 64$, and $m\angle R = 29$. In ΔUVT, $VT = 8$, $TU = 32$, and $m\angle T = 29$.

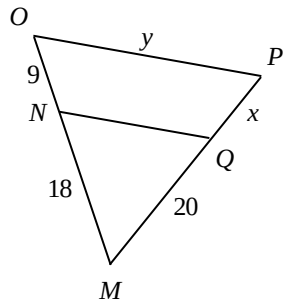
22. Use the information in the diagram to determine the height of the tree to the nearest foot.



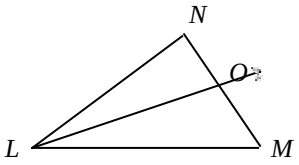
23. Michele wanted to measure the height of her school's flagpole. She placed a mirror on the ground 48 feet from the flagpole, then walked backwards until she was able to see the top of the pole in the mirror. Her eyes were 5 feet above the ground and she was 12 feet from the mirror. Using similar triangles, find the height of the flagpole to the nearest tenth of a foot.



24. Find the values of x and y, given that $\overline{OP} \parallel \overline{NQ}$.



25. $\overrightarrow{LO}$ bisects $\angle NLM$, $LM = 18$, $NO = 4$, and $LN = 10$. Find OM.



Chapter 8 Test Honors Geometry
Answer Section

MULTIPLE CHOICE

1. C
2. D
3. B
4. B
5. B
6. D
7. C
8. A
9. A
10. D
11. B
12. A
13. D
14. A
15. B

SHORT ANSWER

16. 9
17. $\frac{40}{3}$
18. 22.5 ft
19. The triangles are not similar.
20. $AB = 10$; $EF = 2$
21. The triangles are not similar.
22. 80 ft
23. 20 ft
24. $x = 10$; $y = 25.5$
25. 7.2