

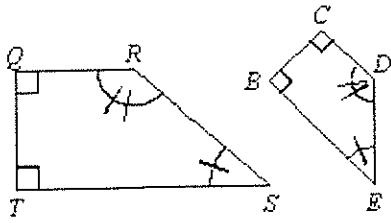
Geometry Unit 7 Study Guide

- _____ 1. A model is made of a car. The car is 10 feet long and the model is 7 inches long. What is the ratio of the length of the car to the length of the model?
A. 10 : 7 B. 7 : 120 C. 120 : 7 D. 7 : 10
- _____ 2. The length of a rectangle is $7\frac{1}{2}$ inches and the width is $4\frac{3}{4}$ inches. What is the ratio, using whole numbers, of the length to the width?
A. 30 : 38 B. 19 : 30 C. 15 : 19 D. 30 : 19
- _____ 3. The measure of two complementary angles are in the ratio 1 : 5. What are the degree measures of the two angles?
A. 36° and 144° C. 30° and 150°
B. 15° and 75° D. 18° and 72°
- _____ 4. A salsa recipe uses green pepper, onion, and tomato in the extended ratio 1 : 3 : 8. How many cups of onion are needed to make 24 cups of salsa?
A. 16 C. 3
B. 6 D. 2

What is the solution of each proportion?

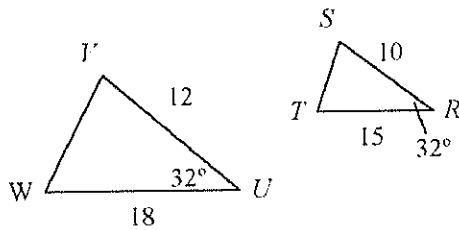
- _____ 5. $\frac{4}{a} = \frac{16}{32}$
A. 32 B. 128 C. 8 D. 16
- _____ 6. $\frac{n-6}{3n} = \frac{n-5}{3n+1}$
A. -3 B. $\frac{2}{5}$ C. $\frac{9}{17}$ D. 3
- _____ 7. $\frac{3y-8}{12} = \frac{y}{5}$
A. -10 B. -7 C. $\frac{3}{40}$ D. $\frac{40}{3}$
- _____ 8. Given the proportion $\frac{a}{b} = \frac{5}{19}$, what ratio completes the equivalent proportion $\frac{a}{5} = \frac{?}{b}$?
A. $\frac{a}{19}$ C. $\frac{5}{19}$
B. $\frac{b}{19}$ D. $\frac{19}{b}$

9. Figure $TQRS \sim BCDE$. What are the pairs of congruent angles?



- A. $\angle R \cong \angle D$, $\angle Q \cong \angle E$, $\angle T \cong \angle B$, and $\angle S \cong \angle C$
- B. $\angle R \cong \angle D$, $\angle S \cong \angle B$, $\angle Q \cong \angle C$, and $\angle T \cong \angle E$
- C. $\angle S \cong \angle D$, $\angle R \cong \angle E$, $\angle T \cong \angle B$, and $\angle Q \cong \angle C$
- D. $\angle R \cong \angle D$, $\angle S \cong \angle E$, $\angle T \cong \angle B$, and $\angle Q \cong \angle C$

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



Not drawn to scale.

10.

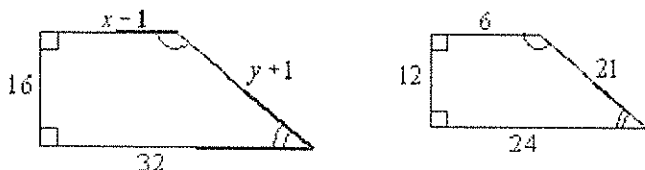
- A. $\triangle RST \sim \triangle WUV$; $\frac{5}{6}$
- B. $\triangle RST \sim \triangle UVW$; $\frac{5}{6}$
- C. $\triangle RST \sim \triangle VWU$; $\frac{6}{5}$
- D. The triangles are not similar.

11. In $\triangle QRS$, $QR = 4$, $RS = 15$, and $m\angle R = 36$. In $\triangle UVT$, $VT = 8$, $TU = 32$, and $m\angle T = 36$.

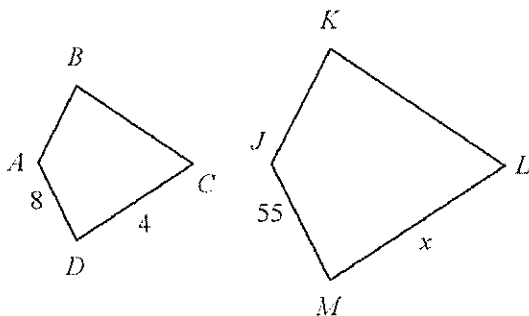
- A. $\triangle QRS \sim \triangle VTU$; $\frac{15}{32}$
- B. $\triangle RSQ \sim \triangle TUV$; $\frac{1}{2}$
- C. $\triangle SRQ \sim \triangle UVT$; $\frac{1}{2}$
- D. The triangles are not similar.

The polygons are similar, but not necessarily drawn to scale. Find the value of x .

_____ 12.



- A. $x = 8$
- B. $x = \frac{11}{2}$
- C. $x = 9$
- D. $x = 10$



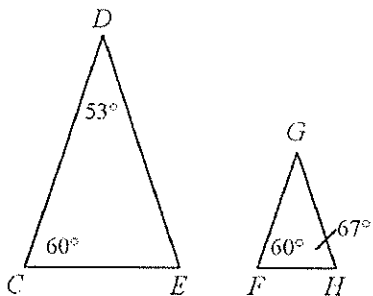
_____ 13.

- A. 220
- B. 27.5
- C. 110
- D. 15.8

_____ 14. In a scale drawing of the solar system, the scale is 1 mm = 500 km. For a planet with a diameter of 9000 kilometers, what should be the diameter of the drawing of the planet?

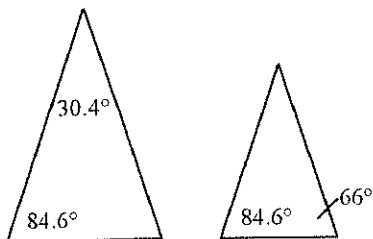
- A. 180 millimeters
- B. 18 millimeters
- C. 4500000 millimeters
- D. 9000 millimeters

_____ 15. Are the two triangles similar? How do you know?



- A. yes, by SAS~
- B. yes, by SSS~
- C. yes, by AA~
- D. no

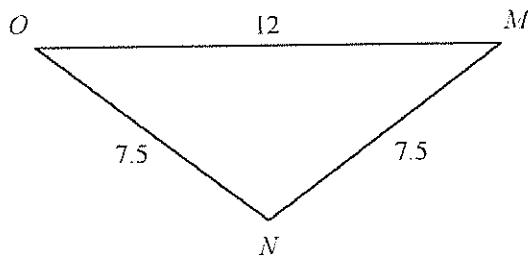
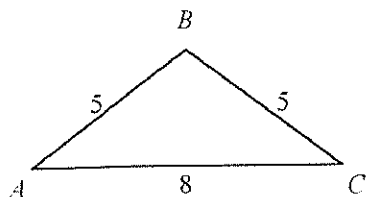
_____ 16. Are the triangles similar? How do you know?



- A. yes, by SAS~ B. yes, by SSS~ C. yes, by AA~ D. no

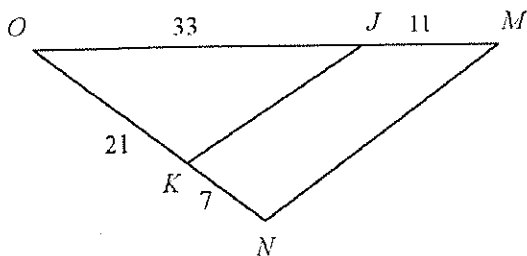
State whether the triangles are similar. If so, write a similarity statement and the postulate or theorem you used.

_____ 17.



- A. $\triangle ABC \sim \triangle MNO$; SSS~ C. $\triangle ABC \sim \triangle MNO$; AA~
 B. $\triangle ABC \sim \triangle MNO$; SAS~ D. The triangles are not similar.

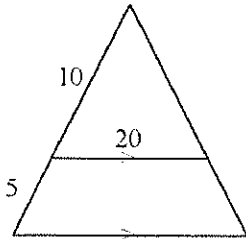
_____ 18.



- A. $\triangle OMN \sim \triangle OJK$; SAS~ C. $\triangle OMN \sim \triangle OJK$; SSS~
 B. $\triangle OMN \sim \triangle JKO$; SAS~ D. The triangles are not similar.

Which theorem or postulate proves the two triangles are similar?

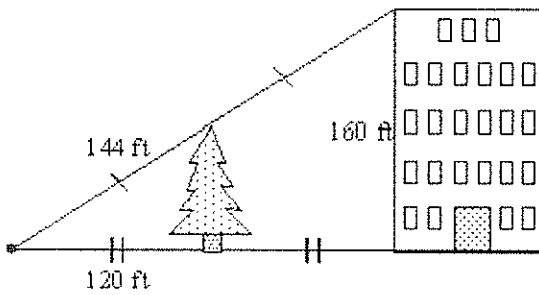
_____ 19.



Not drawn to scale.

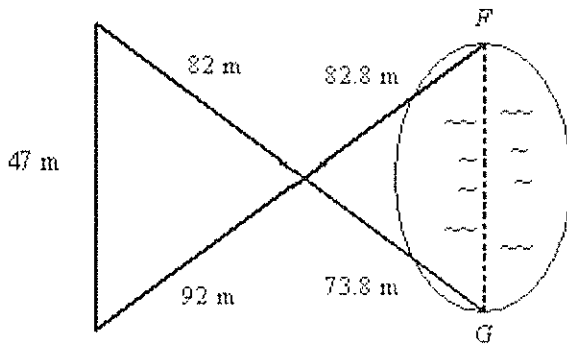
- A. AS Postulate
- B. SSS Theorem
- C. AA Postulate
- D. SAS Theorem

_____ 20. Use the information in the diagram to determine the height of the tree to the nearest foot.



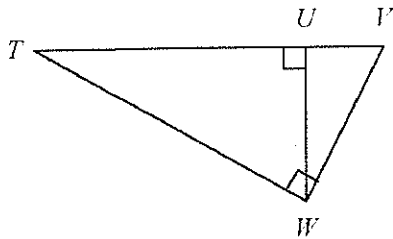
- A. 80 ft
- B. 264 ft
- C. 60 ft
- D. 72 ft

_____ 21. Campsites F and G are on opposite sides of a lake. A survey crew made the measurements shown on the diagram. What is the distance between the two campsites? The diagram is not to scale.



- A. 42.3 m
- B. 47.4 m
- C. 73.8 m
- D. 82.8 m

What similarity statement can you write relating the three triangles in the diagram?



_____ 22.

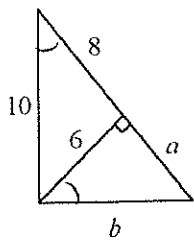
- A. $\triangle UVW \sim \triangle UWT \sim \triangle WVT$ C. $\triangle WUT \sim \triangle VUW \sim \triangle WVT$
 B. $\triangle UVW \sim \triangle WUT \sim \triangle WVT$ D. $\triangle TWV \sim \triangle VUW \sim \triangle UWT$

Find the geometric mean of the pair of numbers.

- _____ 23. 4 and 7
 A. $4\sqrt{2}$ B. $2\sqrt{7}$ C. 28 D. $\sqrt{35}$
- _____ 24. 81 and 4
 A. 38 B. 23 C. 28 D. 18

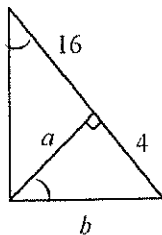
What are the values of a and b ?

_____ 25.



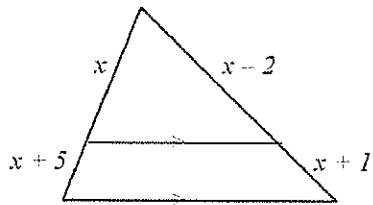
- A. $a = \frac{9}{2}, b = \frac{15}{2}$ C. $a = \frac{16}{3}, b = \frac{15}{2}$
 B. $a = \frac{15}{2}, b = \frac{9}{2}$ D. $a = \frac{9}{2}, b = \frac{13}{2}$

_____ 26.



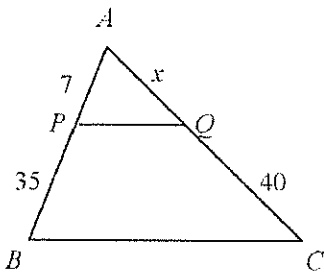
- A. $a = 8, b = 8\sqrt{5}$ C. $a = 8, b = 4\sqrt{5}$
 B. $a = 18, b = 4\sqrt{5}$ D. $a = 64, b = 80$

_____ 27. What is the value of x ?



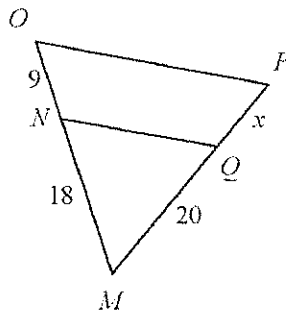
- A. 5 B. 2.5 C. 7.5 D. 10

_____ 28. What is the value of x , given that $\overline{PQ} \parallel \overline{BC}$?



- A. 8 B. 11 C. 10 D. 16

_____ 29. What is value of x , given that $\overline{OP} \parallel \overline{NQ}$?

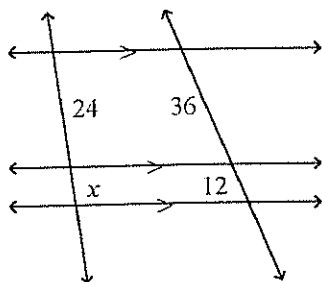


- A. $x = 10$ C. $x = 13$
 B. $x = 20$ D. $x = 25.5$

Name: _____

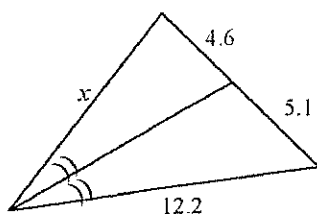
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____ 30. What is the value of x ?



- A. 8 B. 12 C. 6 D. 2

____ 31. What is the value of x to the nearest tenth?



Not drawn to scale.

- A. 1.9 B. 2.4 C. 13.5 D. 11

32. Explain how the Cross Products Property is used to solve the proportion $\frac{a}{4} = \frac{a+2}{12}$.