Geometry

Name: hey

Classifying Triangles HW

Show ALL work!!!

Part 1: Is it a Triangle?

Can a triangle have sides with the given lengths? Explain.

7. 4 m, 7 m, and 8 m yes **8.** 6 m, 10 m, and 17 m no **9.** 4 in., 4 in., and 4 in. yes

10. 1 yd, 9 yd, and 9 yd yes **11.** 11 m, 12 m, and 13 m yes **12.** 18 ft, 20 ft, and 40 ft no

13. 1.2 cm, 2.6 cm, and 4.9 cm no **14.** $8\frac{1}{2}$ yd, $9\frac{1}{4}$ yd, and 18 yd no **15.** 2.5 m, 3.5 m, and 6 m no

16. The sides of a triangle are 10 cm, 8 cm, and 10 cm. Classify the triangle. Isosceles Δ

17. The angles of a triangle are 44°, 110°, and 26°. Classify the triangle. obtuse Δ

The lengths of two sides of a triangle are given. Describe the lengths possible for the third side.

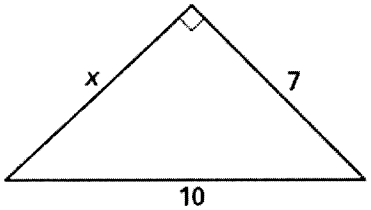
22. 4 in., 7 in. $3<x<11$ **23.** 9 cm, 17 cm $8<x<26$ **24.** 5 ft, 5 ft $0<x<10$

25. 11 m, 20 m $9<x<31$ **26.** 6 km, 8 km $2<x<14$ **27.** 24 in., 37 in. $13<x<61$

Part 2: Using Pythagorean Theorem and its Converse

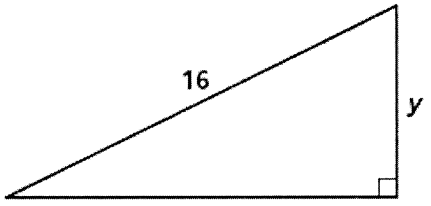
Find the value of each variable. Leave your answers in simplest radical form.

1.



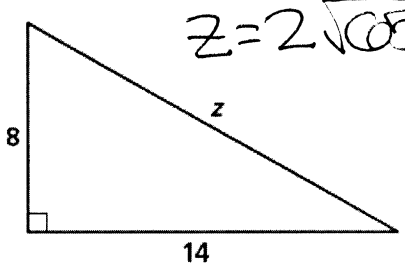
$x=\sqrt{51}$

2.



$y=4\sqrt{7}$

3.



$z=2\sqrt{65}$

The numbers represent the lengths of the sides of a triangle. Classify each triangle as *acute*, *obtuse*, or *right*.

14. 6, 9, 10 acute **15.** 18, 24, 30 right **16.** 20, 100, 110 obtuse

17. 7, 24, 25 right **18.** 2, 5, 6 obtuse **19.** 13, 21, 24 acute