Geometry   Name:_____
Classifying Triangles HW

Show ALL work!!!

Part 1: Is it a Triangle?

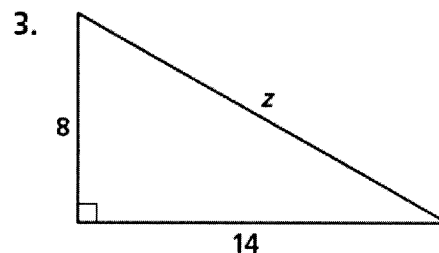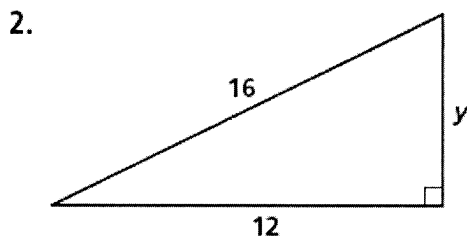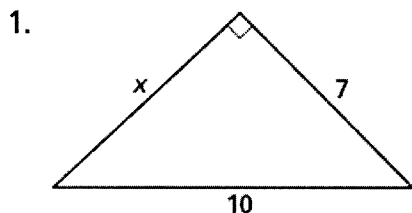**Can a triangle have sides with the given lengths? Explain.**

7. 4 m, 7 m, and 8 m   **8.** 6 m, 10 m, and 17 m   **9.** 4 in., 4 in., and 4 in.

10. 1 yd, 9 yd, and 9 yd   **11.** 11 m, 12 m, and 13 m   **12.** 18 ft, 20 ft, and 40 ft

13. 1.2 cm, 2.6 cm, and 4.9 cm   **14.** $8\frac{1}{2}$ yd, $9\frac{1}{4}$ yd, and 18 yd   **15.** 2.5 m, 3.5 m, and 6 m

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

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

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

22. 4 in., 7 in.   **23.** 9 cm, 17 cm   **24.** 5 ft, 5 ft

25. 11 m, 20 m   **26.** 6 km, 8 km   **27.** 24 in., 37 in.

Part 2: Using Pythagorean Theorem and its Converse

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

1.   **2.**   **3.**

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

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

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