NAME_____

Module 8 **Points, Lines, Angles, and Triangles**
Lesson 4 **Triangles**

Challenge Problems 8.4

Set 1

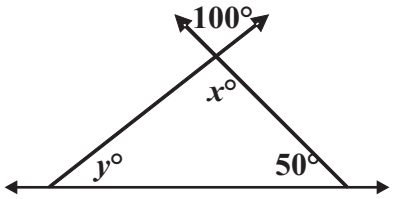
1 One of the triangle classifications listed is not possible. Identify the classification that is not possible. Explain your choice.

obtuse scalene
right equilateral
right isosceles

Set 2

1 In a triangle, two of the angle measures are equal. The third angle measures 80°. What is the measure of the two congruent angles?

2 Find the values of x and y.



Possible Answers

Set 1

1. A right equilateral triangle is not possible. An equilateral triangle is also equiangular. That means the angles of an equilateral triangle must each be 60°. So, there can not be a 90° angle, which means that an equilateral triangle can not be a right triangle.

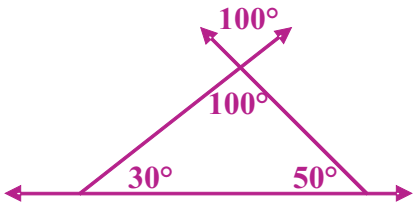
Set 2

1. Write an equation.

$$80° + x + x = 180°$$
$$x + x = 100°$$
$$x = 50°$$

The total of the two congruent angles is 100°, so each one measures 50°.

2. The value of x is 100 because vertical angles are always congruent. Use the Triangle Sum Property to write an equation to find the value of y. The measure of the third angle is 30°.



$$100° + 50° + y = 180°$$
$$150° + y = 180°$$
$$y = 30°$$