**Activity 2.3.2b Angles in Isosceles Triangles**

In the following activity, triangles will be constructed with compass and straight edge by drawing a circle. At this point, it is known that isosceles triangles are triangles with *at least* two congruent sides.

The two congruent sides of an isosceles triangle are called *legs.* The third side is called the *base.*

Using this vocabulary, label the triangles below.

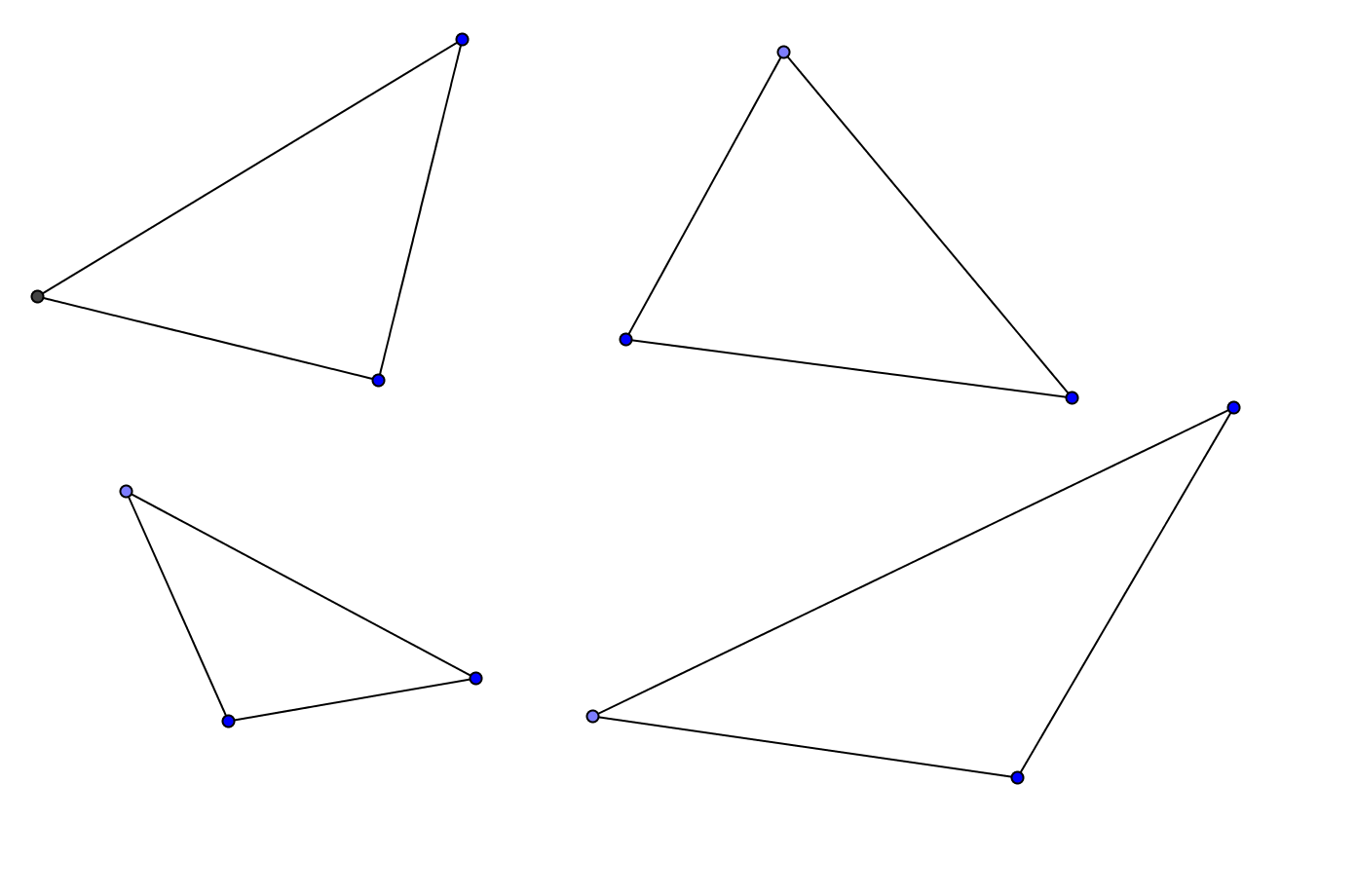
a) b) \_\_\_\_\_\_

\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_

\_\_\_\_\_\_\_

\_\_\_\_\_\_\_

You will be asked to use inductive reasoning (*reasoning that allows you to reach a conclusion based on a pattern of specific examples)* to form a conjecture about the angles in isosceles triangles.

1. Cut out the triangles from the templates below or one given to you by your teacher. 

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2. Now fold all of the triangles you created on their axis of symmetry.

What do you notice about the sides and the angles that overlap?

*Line of symmetry*

3. The overlapping sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. The overlapping angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. Now form a conjecture (a generalization using inductive reasoning).

\*\*If two sides of a triangle are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then the angles opposite these sides

are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. What transformation was used in this activity?

**Vocabulary related to Isosceles triangles**

Legs: the two congruent sides

Base: the third side of and isosceles triangle that is not necessarily congruent to the other sides

Base angles: the angles opposite from the legs and adjacent to the base

Vertex angle: the angle opposite from the base in an isosceles triangle

7. Now label the isosceles triangle below with the above vocabulary.