EXPLORATIONS

Activity 4

Isosceles Triangle

Construct the geometric object by following the instructions below, and then answer the questions about the object.

1. Create an isosceles triangle.

   a. Construct segment $\overline{AB}$.

   b. Measure and label segment $\overline{AB}$.

   c. From the Construct Toolbar, select **Measurement Transfer**.

   d. Move pointer to the measurement of $\overline{AB}$ until the message ***This number*** appears. Click once.

   e. Move pointer to point A until the message ***This point*** appears. Click once and type C.

   f. Construct segments $\overline{AC}$ and $\overline{CB}$.

2. From the Measure Toolbar, select **Distance and Length**.

3. Measure and label segments $\overline{AC}$ and $\overline{CB}$.

4. From the Measure Toolbar, select **Angle**.
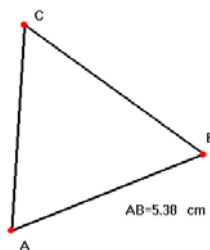
5. Measure and label all angles.

Figure 4.1

6. Which two sides are congruent?

   _____

7. Which two angles are congruent?

_____

8. Is $\angle B$ opposite or adjacent to side AC?

_____

9. Is $\angle C$ opposite or adjacent to side AB?

_____

10. Alter the triangle.

11. What can you conclude about the relationship between the sides and angles of an isosceles triangle?

_____

12. Alter the triangle to make several different isosceles triangles to confirm your conclusion.

13. What can you conclude about the relationship between the sides and angles of an isosceles triangle?

_____

14. Clear the screen.

15. Create an equilateral triangle.

   a. From the Lines Toolbar, select **Regular Polygon**.

   b. Click once and drag to form a dotted circle. Click to deselect the circle.

   c. Click and drag again until a triangle appears.

   d. Click again.

16. From the Measure Toolbar, select **Angle**.

17. Measure and label the angles of the triangle.

18. How are the angles related?

_____

19. Alter the triangle.

20. What can you conclude about the equilateral triangle?

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