NAME _____

Module 4 Solving Problems Using Linear Equations of One Variable

Lesson 3 Solving Geometry Problems Using Equations of One Variable

guided notes

Lesson Objective

- Write and solve linear equations of one variable to solve geometry problems about perimeter and angle sums.

Perimeter is the sum of the lengths of the sides of a polygon.

Three steps for solving a geometry problem are:

- **draw a sketch**
- **write an equation**
- **solve and check**

An isosceles triangle has **two congruent** sides. The two congruent sides are called **legs** and the other side is called the **base**.

1. The perimeter of a square is 18 m. What is the length of each side?

   Each side is 4.5 m long.

2. Consider a scalene triangle with its perimeter being 33 cm. The 2nd side is twice the length of the 1st, and the 3rd side is 5 cm longer than the 1st. What is the length of the longest side? **The longest side is 14 cm.**

3. The perimeter of a rectangle is 150 cm. Its length is twice its width. Find the length of the rectangle. **The length is 50 cm.**

The sum of the measures of the angles of a triangle is **180°**.

Complementary angles are two angles whose measures have a sum of **90°**.

Supplementary angles are two angles whose measures have a sum of **180°**.

4. The measure of an angle is ten less than the measure of its supplement. Find the measure of the angle. **The smaller angle is 85°.**

5. In an isosceles triangle, if each base angle measures 60° less than the vertex angle, what is the measure of each base angle? **Each base angle is 40°.**

6. In a triangle, the 2nd angle is twice the measure of the 1st. The 3rd angle is three times the measure of the 1st. What is the measure of the largest angle? **The largest angle is 90°.**