Reteaching Page
9.8 – Solving Integer Equations

As with any equations – there are steps to follow to make sure that you are keeping the equations balanced.

1. Simplify any portion possible
2. Use inverse operations to move any extra terms away from the variable.
3. Use inverse operations to get the variable alone.
4. Check your answer.

$$(-4)n + 6 = (-14)$$

Step 1

There aren't any portions to this problem that we can simplify by combining.

Step 2

In this problem the n is hanging around with a *(-4) and a + 6. The +6 is an extra term that we should move.

$$(-4)n + 6 - 6 = (-14) – 6$$
$$(-4)n = (-20)$$

Step 3

The inverse of multiplying by negative 4 is dividing by negative 4 – divide both sides by negative 4.

$$\frac{(-4)n}{(-4)} = \frac{(-20)}{(-4)}$$
$$n = 5$$

Step 4

Use substitution to check your work.

$$(-4)5 + 6 = (-14)$$
$$-20 + 6 = (-14)$$
$$(-14) = (-14)$$

To solve equations with integers it is very important that you are a master of the algorithms (rules) used to calculate addition, subtraction, multiplication and division!

Addition	Subtraction	Multiplication and Division
Same Signs – 1. **A**dd the absolute values 2. Assign the sign. **Different Signs** – 1. Subtract the absolute values 2. Assign the sign of the greatest absolute value.	1. Rewrite the problem as an addition problem. 2. Follow addition rules to solve.	1. Same signs result in a positive product or quotient. 2. Different signs result in a negative product or quotient.