***Solve Proportional Relationships***

**Example 1 - Solve using Equivalent Fractions**

**Solve**

Look for a relationship between the two fractions OR between the numbers in the full ratio.

3 • *9* = 27 The numerator of 3 can multiplied by 9 to get the denominator.

7 • *9* = 63 *Use that same multiplication (in the same direction) for the other ratio.*

*m = 63* Write the answer and include the variable.

**Example 2 - Solve using Cross Products**

**Solve**

12 • 70 = 30 • *k* Find the cross products. Multiply the numerator of one ratio by the denominator of the   
 other ratio. Set the products equal to each other. It’s an equation!!!

840 = 30*k* Simplify.

Solve the equation using inverse operations. Divide each side by 30.

28 = *k* Simplify.

**Solve each proportion.**

**1. 2. 3**.

**4. 5**.  **6.**

**7. 8.**   **9.**

**10. 11. 12.**

**13.**   **14. 15.**

**For Exercises 10 –12, assume all situations are proportional.**

**16. CLASSES** For every girl taking classes at the martial arts school, there are 3 boys who are taking classes at the school. If there are 236 students taking classes, write and solve a proportion to predict the number of boys taking classes at the school.

**17. BICYCLES** An assembly line worker at Rob’s Bicycle factory adds a seat to a bicycle at a rate of 2 seats in 11 minutes. Write a proportion relating the number of seats *s* to the number of minutes *m*. At this rate, how long will it take to add 16 seats? 19 seats?

**18. PAINTING** Lisa is painting a fence that is 26 feet long and 7 feet tall. A gallon of paint will cover 350 square feet. Write and solve a proportion to determine how many gallons of paint Lisa will need.