Name: _____

Unit 1 – Numeracy Skills

1.6 – Solving Proportions

Cross Multiplication can be used to solve word problems involving proportions.
Set up your proportion first and then place the information provided in the appropriate spots.

Example 1: The ratio of the width of a television screen to its height is 4 to 3. What is the height of a screen with a width of 32 inches?

Step A: Set up the ratio in words:

Step B: Set up the **GIVEN** ratio:

Step C: Set up the ratio with the **UNKNOWN** quantity:

Step D: Set up the Proportion:

Step E: Solve using Cross Multiplication:

NOTE: In proportions, the terms of the fractions must correspond. This means that in the example above, the width must ALWAYS be in the same part of the fraction and the height must ALWAYS be in the same part of the fraction.

Example 2: The ratio of the length of the Canadian flag to its width is 2 to 1. What is the length of a Canadian flag that is 24 cm wide?

Example 3: If the human body burns 102 calories for every 10 minutes of swimming, calculate how many calories it will burn in 1 hour of swimming.

Assignment

Use the **Cross Multiply** technique to find the values of the **VARIABLE** in each **PROPORTION** given below.

YOU MAY USE CALCULATORS BUT SHOW ALL WORK! Round your answers to one decimal place.

1. $\frac{x}{7} = \frac{15}{33}$

2. $\frac{17}{2.5} = \frac{25.6}{z}$

3. $\frac{23}{19} = \frac{b}{1.8}$

4. $\frac{6.85}{m} = \frac{9.1}{3.04}$

5. $\frac{3.31}{12} = \frac{30}{l}$

6. $\frac{18}{2} = \frac{r}{7.4356}$

4. A cake recipe requires 3 cups of sugar for every 2.5 cups of butter. If you use 7 cups of butter, how many cups of sugar will you need?

5. A 53 gallon tank of water takes 23 minutes to fill. How many gallons of water will be in the tank after 15 minutes?

6. A 32 foot tree casts a shadow of 45 feet. Cindy is 5 feet tall. How many feet will be Cindy's shadow?