

Name: _____

Unit 1 – Numeracy Skills

1.5 – Introduction to Cross Multiplication & Solving Simple Proportions

Cross Multiplication is a Math rule that determines how we are allowed to move the numbers/variables in a **PROPORTION**.

Example: How do we check if $\frac{9}{30} = \frac{3}{10}$ is a Proportion?

Method 1:

Method 2:

Move the digits 9, 30, 3, and 10 into **different** positions and check to see if you still have a Proportion.

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

___ = ___

So.....what is the RULE for moving the digits 9, 30, 3 and 10 so that the equation remains a Proportion?????

The RULE is called the _____ rule

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Remember: The digits can only move along the _____

If two digits end up in the same spot, they get _____

We can use the **Cross Multiply** technique to find values of any unknown numerator or denominator in a proportion.

Example 1: Find the value of x given: $\frac{x}{3} = \frac{8}{6}$ **or** Find a value for x so that the equation is a Proportion.

Example 2: Find the value of m given: $\frac{9}{3} = \frac{21}{m}$

Example 3: Find the value of p given: $27 = \frac{p}{3}$

Assignment

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

NO CALCULATORS & SHOW ALL WORK!

1. $\frac{x}{7} = \frac{5}{35}$

8. $\frac{10}{2} = \frac{25}{z}$

2. $\frac{2}{9} = \frac{b}{18}$

9. $\frac{6}{m} = \frac{9}{3}$

3. $\frac{3}{2} = \frac{30}{l}$

10. $\frac{8}{2} = \frac{r}{7}$

4. $\frac{12}{n} = \frac{6}{4}$

11. $\frac{27}{x} = 9$

5. $\frac{r}{6} = \frac{7}{4}$

12. $5 = \frac{40}{g}$

6. $\frac{25}{t} = \frac{5}{4}$

13. $\frac{28}{7} = m$

7. $\frac{f}{3} = \frac{7}{1}$

14. $\frac{10}{2} = \frac{1}{s}$