

# 11.1 Proportions

May 09, 2007

$$\frac{a}{b} = \frac{c}{d}$$

$a, b, c, \text{ \& } d$  can be ...  
Numbers, Variables, or Polynomials

Where  $a$  &  $d$  are called extremes  
and  $b$  &  $c$  are called Means

Cross Multiply

$$a \cdot d = b \cdot c$$

extremes = means

ex1)  $\frac{5}{2} = \frac{60}{x}$

$$5 \cdot x = 2 \cdot 60$$

$$\frac{5x}{5} = \frac{120}{5}$$

$$\underline{\underline{x = 24}}$$

ex2)

$$\frac{3}{x} = \frac{(x+1)}{4}$$

If it is larger than a Monomial you must please... Put it in ( ).

$$3 \cdot 4 = x \cdot (x+1)$$

$$12 = x^2 + x$$

Quadratic... So... Set equal to zero!

$$\frac{-12}{+2} \quad \frac{-12}{-2}$$

$$0 = x^2 + x - 12$$

Factorized

$$0 = (x-3)(x+4)$$

$$\begin{array}{r} x-3=0 \\ +3 \quad +3 \\ \hline x=3 \end{array}$$

or

$$\begin{array}{r} x+4=0 \\ -4 \quad -4 \\ \hline x=-4 \end{array}$$

ex3)

$$\frac{(y^2-9)(y-3)}{(y+3) \cdot 2}$$

dist Prop      FOIL

$$(y^2-9) \cdot 2 = (y+3)(y-3)$$

$$2y^2 - 18 = y^2 - 3y + 3y - 9$$

$$y^2 - 9 = 0$$

$$(y+3)(y-3) = 0$$

$$\begin{array}{l} y+3=0 \quad \text{or} \quad y-3=0 \\ \begin{array}{r} -3 \quad -3 \\ \hline y = -3 \end{array} \quad \text{or} \quad \begin{array}{r} +3 \quad +3 \\ \hline y = 3 \end{array} \end{array}$$

O.T.L.

① pg 636: 21-35 (all)