

Review

May 16, 2007

Proportions:

$$\frac{x}{10} = \frac{4}{5}$$

$$10 \cdot 4 = x \cdot 5$$

$$\frac{40}{5} = \frac{5x}{5}$$

$$\underline{\underline{8 = x}}$$

$$\frac{(6x+4)}{5} = \frac{2}{x}$$

$$5 \cdot 2 = (6x+4)x$$

$$10 = 6x^2 + 4x$$

$$\frac{-10}{-10} \quad \frac{-10}{-10}$$

$$0 = 6x^2 + 4x - 10$$

$$0 = 2(3x^2 + 2x - 5)$$

$$0 = 2(x-1)(3x+5)$$

$$\begin{array}{l}
 \cancel{2=0} \text{ or } x-1=0 \text{ or } 3x+5=0 \\
 \begin{array}{l}
 +1 \quad +1 \\
 \hline
 x=1
 \end{array}
 \text{ or }
 \begin{array}{l}
 \frac{3x}{3} = \frac{-5}{3} \\
 x = -\frac{5}{3}
 \end{array}
 \end{array}$$

Simplify

$$\frac{\cancel{3}15x^{\cancel{2}}}{2\cancel{10}x} = \frac{3x}{\underline{\underline{2}}}$$

Simplify

$$\frac{x^2 - 7x + 12}{x^2 + 3x - 18}$$

1.12
2.6
3.4

$$x^2 + 3x - 18$$

1.18
2.9
3.6

Make Sure You Factor Completely

$$= \frac{(x-3)(x-4)}{(x-3)(x+6)} = \frac{(x-4)}{(x+6)}$$

$$\frac{(3-x)}{x^2 \oplus x - 12} = \frac{-1(x-3)}{(-x+3)(3-x)} = \frac{-1}{(x+4)}$$

The denominator $x^2 \oplus x - 12$ is factored into $(x-3)(x+4)$. The factors are $(x-3)$ and $(x+4)$. The numerator is $(3-x)$. The final simplified expression is $\frac{-1}{(x+4)}$.

$$\frac{5x}{11x + x^2} = \frac{\cancel{5x}}{\cancel{x}(11+x)} = \frac{5}{(11+x)}$$

$$(x^2 - 3x - 28) \div (x - 7)$$

$$(x + 4) \cancel{(x - 7)}$$

$$\begin{array}{r} x^2 - 3x - 28 \\ \hline 1 \end{array}$$

$$\frac{1}{\cancel{(x - 7)}}$$

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

$$(6x^2 + 11x + 3) \div (3x + 1)$$

$$\begin{array}{r} (3x+1)(2x+3) \\ \underline{6x^2 + 11x + 3} \\ 0 \end{array} \div (3x+1) = \underline{\underline{(2x+3)}}$$

$$\begin{aligned}
 & \frac{(2x-4)}{x^2+3x} \ominus \frac{x-7}{x^2+3x} = \frac{\overbrace{(2x-4)}^{(x+3)} - \overbrace{(x-7)}^{(x+3)}}{\underbrace{(x^2+3x)}_{x(x+3)}} = \frac{1}{x}
 \end{aligned}$$

Subt. + Simp.

Adding + Simp.

Mult. + Simp.

Divi. + Simp.

Test
Tomorrow

Pro. (cross multiply)

Means = Extremes

has an equal sign