Algebra 2 Bellwork Tuesday, January 14, 2014

Solve each rational equation.

1. $\frac{2}{x^2+3x-10} = \frac{6}{x^2-3x+2}$

$(x+5)(x-2)$ $(x-1)(x-2)$

$2x-2-6x-30=0$

$-4x-32=0$

$+32 \quad +32$

$\frac{2x-2}{(x+5)(x-2)(x-1)}$ $\frac{6x+30}{(x+5)(x-2)(x-1)}$

$\frac{-4x=32}{-4 \quad -4}$

$x=-8$

2. $\frac{2x}{x-2} - \frac{x}{x-6} = \frac{24}{x^2-8x+12}$

$\frac{(x-6)}{(x-6)}\frac{2x}{x-2} - \frac{x}{x-6}\frac{(x-2)}{(x-2)} = \frac{24}{(x-6)(x-2)}$

$\frac{2x(x-6)}{(x-2)(x-6)} - \frac{x(x-2)}{(x-2)(x-6)} = \frac{24}{(x-6)(x-2)}$

$2x^2-12x-x^2+2x=24$ $x=12,-2$

$x^2-10x-24=0$ $(x-12)(x+2)$

-6 12 -8 2

3. Find this sum. $\frac{4}{x^2-64} - \frac{5x}{x^2+11x+24}$

$\frac{(x+3)}{(x+3)}\frac{4}{(x+8)(x-8)} + \frac{-5x}{(x+8)(x+3)}\frac{(x-8)}{(x-8)}$

$4x+12 \quad -5x^2+40x$

$\frac{-5x^2+44x+12}{(x+8)(x-8)(x+3)}$

4. Find this quotient. $\frac{x^2+2x-24}{6x^4+36x^3} \div \frac{x^2-x-12}{10x^2+20x}$

$\frac{(x+6)(x-4)}{6x^3(x+6)} \cdot \frac{10x(x+2)}{(x-4)(x+3)}$

$\frac{10x}{6x^3} \quad \frac{\div 2}{\div 2} \quad \frac{\div x}{\div x}$

$\frac{5(x+2)}{3x^2(x+3)}$

5. Simplify.

$$\frac{\frac{5x}{y^3}+\frac{7}{4x^2y}}{\frac{8}{x^3y^2}-\frac{x}{10y^4}}$$

$\frac{20x^3}{20x^3}\cdot\frac{y^4}{y^4}$

$$\frac{100x^4y+35xy^3}{160y^2-2x^4}$$

6. Does each table represent Direct Variation, Inverse Variation, or neither? If there is a variation relationship write a variation equation and find the value of x when y = 70.

A

X	Y	XY
16	15	240
25	9.6	240
-6	-40	240
125	1.92	240
150	1.6	INVERSE

EQ: $(X)(Y)=240$ or $y=\frac{240}{x}$

x= 3.42

B

X	Y	$\frac{Y}{X}$
-5	32	-6.4
-2	12.8	-6.4
4	-25.6	-6.4
18	-115.2	⋮
23	-147.2	Direct

EQ: $\frac{Y}{X}=-6.4$

$y=-6.4x$

x= -10.9375