Algebra 2 Bellwork Friday, January 22, 2016

Find each sum or difference. No need to state restrictions on the variables.

1.

$$\frac{4}{x^2+3x-10}-\frac{9}{x^2-4}$$

2.

$$\frac{6}{2x^3+8x^2-42x}+\frac{5x}{4x^4-24x^3+36x^2}$$

3. Simplify this compound rational expression. No need to state restrictions on the variables.

$$\frac{\frac{3}{4x^2y}-\frac{4x}{y^3}}{\frac{2}{xy^2}+\frac{5}{6x^3}}$$

Algebra 2 Bellwork Friday, January 22, 2016 ANSWERS

Find each sum or difference. No need to state restrictions on the variables.

1.

$$\frac{4}{x^2+3x-10}-\frac{9}{x^2-4}=\frac{-5x-37}{(x+2)(x-2)(x+5)}$$

$$\frac{x+2}{x+2}\cdot\frac{4}{(x+5)(x-2)}-\frac{9}{(x+2)(x-2)}\cdot\frac{x+5}{x+5}$$

$$\frac{4x+8-9x-45}{(x+2)(x-2)(x+5)}$$

2.

$$\frac{17x^2-x}{4x^2(x+7)(x-3)^2}$$

$$\frac{6}{2x^3+8x^2-42x}+\frac{5x}{4x^4-24x^3+36x^2}$$

$$2x(x^2+4x-21) \qquad 4x^2(x^2-6x+9)$$

$$\frac{2x(x-3)}{2x(x-3)}\cdot\frac{6}{2x(x+7)(x-3)}+\frac{5x}{4x^2(x-3)(x-3)}\cdot\frac{x+7}{x+7}$$

$$\frac{12x^2-36x+5x^2+35x}{4x^2(x-3)(x-3)(x+7)}$$

3. Simplify this compound rational expression. No need to state restrictions on the variables.

$$\frac{\frac{3}{4x^2y}-\frac{4x}{y^3}}{\frac{2}{xy^2}+\frac{5}{6x^3}}\cdot\frac{12x^3y^3}{12x^3y^3}=\frac{9xy^2-48x^4}{24x^2y+10y^3}$$