Algebra 2 Bellwork Monday, January 12, 2015

Simplify each. State restrictions on the variable.

1. $\frac{x^3+2x^2-9x-18}{10x^3-30x^2} \cdot \frac{12x^2-24x}{3x^2-12}$

2. $\frac{6x^2+24x}{4x^3-12x^2} \div \frac{3x^2+6x}{x^2-x-6}$

3. Find this difference by following these steps.

>Factor both denominators.

>Find the LCD and get both fractions to have that LCD.

>For the numerator simplify by using the distributive property and combing like terms.

$\frac{2}{x^2-25} + \frac{6}{x^2+7x+10}$

ANSWERS

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Simplify each. State restrictions on the variable.

	x^3	$2x^2$
x		
-9	$-9x$	-18

1. $\frac{x^3+2x^2-9x-18}{10x^3-30x^2} \cdot \frac{12x^2-24x}{3x^2-12} = \frac{2(x+3)}{5x}$

$3(x^2-4)$

$\frac{(x+3)(x-3)(x+2)}{10x^2(x-3)} \cdot \frac{12x(x-2)}{3(x+2)(x-2)}$

$x \neq 0, 3, \pm 2$

2. $\frac{6x^2+24x}{4x^3-12x^2} \div \frac{3x^2+6x}{x^2-x-6} = \frac{x+4}{2x^2}$

$3x(x+2)$

$(x-3)(x+2)$

$x \neq 0, 3, -2$

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

3. Find this difference by following these steps.

>Factor both denominators.

>Find the LCD and get both fractions to have that LCD.

>For the numerator simplify by using the distributive property and combing like terms.

$\frac{2}{x^2-25} + \frac{6}{x^2+7x+10}$

LCD $\rightarrow$ $(x+5)(x-5)(x+2)$

$\frac{(x+2)}{(x+2)} \cdot \frac{2}{(x+5)(x-5)} + \frac{6}{(x+5)(x+2)} \cdot \frac{(x-5)}{(x-5)} = \frac{2x+4+6x-30}{(x+5)(x-5)(x+2)}$

$= \frac{8x-26}{(x+5)(x-5)(x+2)}$