Multiplying and dividing rational expressions

29.1

3/9/17

Warm-up

Factor

1) $12y - 3y^2$

2) $9n^3 - 9n^2$

3) $x^2 - 64$

4) $z^2 + 5z - 14$

5) $2x^2 + 7x + 3$

6) $x^3 - x^2 - 2x$

I do:

Simplify

$$\frac{x^2 + 5x - 14}{x^2 - 4}$$

Factor	$\frac{(x+7)(x-2)}{(x+2)(x-2)}$
Cancel out	$\frac{(x+7)\cancel{(x-2)}}{(x+2)\cancel{(x-2)}}$
Simplify And state restrictions	$\frac{x+7}{x+2}$ $x \neq -2, 2$

We do:

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

Factor	
Cancel out	
Simplify And state restrictions	

You do with your partner:
Simplify

1) $\frac{x^2+5x+6}{x^2-9}$

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

CW Pg. 446 a-c

I Try

Multiplying Rational expressions

$$\left(\frac{x^2+5x-14}{x^2-4}\right)\cdot\frac{x+2}{x+3}=$$

Factor	$\frac{(x+7)(x-2)}{(x+2)(x-2)}\cdot\frac{x+2}{x+3}$
Cancel out	$\frac{(x+7)\cancel{(x-2)}}{\cancel{(x+2)(x-2)}}\cdot\frac{\cancel{x+2}}{x+3}$
Combine, Simplify And state restrictions	$\frac{x+7}{x+3}$ $x\neq 2,-2,-3$

We Try:

$$\frac{2x^2-8}{x^2-1}\cdot\frac{x^2+2x+1}{x^3-x^2-2x}$$

Factor	
Cancel out	
Combine, Simplify And state restrictions	

Division

$$\frac{x^2+5x+6}{x^2-4} \div \frac{5x+15}{3x^2-4x-4}$$

Flip the right side	$\frac{x^2+5x+6}{x^2-4} \cdot \frac{3x^2-4x-4}{5x+15}$
Factor	
Cancel out	
Combine and simplify Identify restrictions	

We Try:

$$\frac{3x^2 + 6x}{6x^2 - 3x} \div \frac{x + 1}{2x - 1}$$

Flip the right side	
Factor	
Cancel out	
Combine and simplify Identify restrictions	

You Try:

$$\frac{9n + 9}{27n^3 + 27n^2} \div \frac{8}{9n^2}$$

CW:PG 447 a,b, 4,5
Pg 448 #6,9-11