

### Multiplying Rational Expressions

Remember how to multiply fractions...

$$\frac{1 \cancel{12} \times \cancel{5} 1}{11 \cancel{55} \cancel{48} 4} = \frac{1}{44}$$

$$\frac{12 \times 5}{55 \times 48}$$

### Multiplying Rational Expressions

Use the same process and rules to multiply rational expressions...

$$\frac{3x^2}{5xy^2} \times \frac{15xy}{12xy^3}$$

$5 \cdot x \cdot y^2$

$$\frac{\cancel{x}(3x)}{\cancel{5}(y^2)} \times \frac{3xy(\cancel{5})}{\cancel{3}xy(\cancel{4}y^2)} = \frac{3x}{4y^4}$$

$x \neq 0$   
 $y \neq 0$

Remember... always factor first and state restrictions

### Multiplying Rational Expressions

Use the same process and rules to multiply rational expressions...

$$\frac{x^2 - 4}{(x+6)^2} \times \frac{x^2 + 9x + 18}{2(2-x)}$$

Remember... always factor first and state restrictions

$$\frac{(x+2)(x-2)}{(x+6)(x+6)} \times \frac{(x+3)(x+6)}{-2(x-2)}$$

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

$x \neq -6$   
 $+2$

### Dividing Rational Expressions

Remember how to divide fractions...

$$\frac{21}{16} \div \frac{27}{12}$$

$$\frac{7 \cancel{3} 1}{4 \cancel{16} 2} \times \frac{\cancel{12} 1}{\cancel{27} 9 3} = \frac{7}{12}$$

### Dividing Rational Expressions

Use the same process and rules to multiply rational expressions...

$$\frac{21p - 3p^2}{16p + 4p^2} \div \frac{14 - 9p + p^2}{12 + 7p + p^2}$$

Remember... always factor first and state restrictions

$$\frac{-3p(p-7)}{4p(p+4)} \div \frac{(p-7)(p-2)}{(p+3)(p+4)}$$

$p \neq 0, -4, -3, -2$

$$\frac{-3(p+3)}{4(p-2)}$$

$p \neq -4, -3, 0, 2, 7$

~~Assignment~~

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Warm up - #1, 2, 4

Basic - 3, 6

Average - 7, 8

Challenge: 9, 10, 11, 13