Accelerated Geom/Alg 2
Multiplying/Dividing Rational Expressions

Name Key
Date _____ Block _____

Simplify each expression.

1. $\frac{3x^2-5x-2}{x^2-4}$

$\frac{(3x+1)(x-2)}{(x-2)(x+2)}$

1. $\frac{3x+1}{x+2}$

2. $\frac{x^3-125}{x^3-125}$

$\frac{(x+5)(x-5)}{(x-5)(x^2+5x+25)}$

2. $\frac{x+5}{x^2+5x+25}$

3. $\frac{x^2-2x}{x^2+2x+1} * \frac{x^2+4x+3}{x^2+3x}$

$\frac{x(x-2)}{(x+1)(x+1)} \cdot \frac{(x+3)(x+1)}{x(x+3)}$

3. $\frac{x-2}{x+1}$

4 $\frac{21x^{10}y^5}{5x^2} * \frac{x^3}{35y^4}$.

$\frac{21x^{13}y^5}{175x^2y^4}$

4. $\frac{3x^{11}y}{25}$

5. $\frac{7x^2-21x}{x^2-2x-35} \div \frac{x^2}{x-7}$

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

5. $\frac{7(x-3)}{x(x+5)}$

6. $\frac{2x^3-12x^2}{x^2-4x-12} \div \frac{8x^3+24x^2}{x^2+9x+18}$

6. $\frac{x+6}{4(x+2)}$

$\frac{2x^2(x-6)}{(x-6)(x+2)} \cdot \frac{(x+6)(x+3)}{8x^2(x+3)}$

4

7. $\frac{x^2-100}{4x^2} * \frac{x^3-5x^2-50x}{x^4+10x^3} \div \frac{(x+10)^2}{5x}$

7. $\frac{5(x-10)^2(x+5)}{4x^3(x+10)^2}$

$\frac{(x-10)(x+10)}{4x^2} \cdot \frac{x(x^2-5x-50)}{x^3(x+10)} \cdot \frac{5x}{(x+10)(x+10)}$

$(x-10)(x+5)$

x

8. $\frac{1}{x^3+10x^2} \div \frac{x-3}{x^2-9} * \frac{x+10}{x^2+7x+12}$

8. $\frac{1}{x^2(x+4)}$

$\frac{1}{x^2(x+10)} \cdot \frac{(x+3)(x-3)}{(x-3)} \cdot \frac{(x+10)}{(x+3)(x+4)}$