

**Sec 4.4 – Rational & Radical Relationships**  
**Multiplying & Dividing Rational Expressions**

Name: \_\_\_\_\_

**Multiply and Simplify the following Rational Expressions** (Hint: It helps to factor all of the numerators and denominators first.)

1.  $\frac{x+2}{x^2-4x-12} \cdot \frac{x^2-36}{x-2}$

2.  $\frac{x^2+x-2}{x^2+5x-6} \cdot \frac{x+6}{x+5}$

1.

2.

3.  $\frac{1}{3m+6} \cdot \frac{3}{m+3}$

4.  $\frac{2a+4}{8a^2} \cdot \frac{12a}{a+2}$

3.

4.

5.  $\frac{y^2-2y-15}{y^2-3y-10} \cdot \frac{y^2-4y+3}{y^2-9}$

6.  $\frac{2x^2-3x-2}{3x-6} \cdot \frac{6x}{4x^2-1}$

5.

6.

**Divide and Simplify the following Rational Expressions** (Hint: It helps to factor all of the numerators and denominators first.)

7.  $\frac{x^2+3x-10}{x^2-2x-15} \div \frac{x^2+x-6}{x^2+6x+9}$

8.  $\frac{x+5}{2x} \div \frac{x+5}{8}$

7.



8.



9.  $\frac{m^2}{m+5} \div \frac{m^2+5m}{m^2+10m+25}$

10.  $\frac{p^2+2p-3}{p^2+2p-8} \div \frac{p^2-1}{p-2}$

9.



10.



11.  $\frac{\frac{x^2-4x}{x^2-8x+16}}{\frac{12}{2x-8}}$

12.  $\frac{\frac{b+3}{b^2+6b+9}}{\frac{b+2}{b^2-9}}$

11.



12.

