Algebra 2 Worksheet Name: Key 5.2

Section 8.2 – Multiplying and Dividing Rational Expressions DAY 1 Period: __

CW #10

I. Simplify. Be sure to identify ANY x-values for which the ORIGINAL expression is undefined.

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

$\frac{4x^6}{2(x-3)}$ $x-3\neq 0$, $x\neq 3$

$\frac{4x^6}{2(x-3)}$, $x\neq 3$

2. $\frac{x+4}{3x^2+11x-4}$

$\frac{(x+4)}{(3x-1)(x+4)}$

$\frac{1}{3x-1}$, $x\neq 1/3; -4$

3. $\frac{5-x}{x^2-x-20}$

$\frac{-(x-5)}{(x-5)(x+4)}$

$\frac{-1}{x+4}$, $x\neq 5; -4$

II. Multiply. Assume that all expressions are defined.

4. $\frac{x^2y}{4xy}\cdot\frac{x}{6}\cdot\frac{3y^5}{x^4}$

$\frac{x^2y}{4xy}\cdot\frac{x}{6}\cdot\frac{3y^5}{x^4}$

$\frac{3y^6x^3}{24x^5y}$

$\frac{y^5}{8x^2}$

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

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

$\frac{2}{x+2}$

6. $\frac{x-2}{x-3}\cdot\frac{2x-6}{x+5}$

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

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

7. $\frac{x^2-16}{x^2-4x+4}\cdot\frac{x-2}{x^2+6x+8}$

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

$\frac{x-4}{(x-2)(x+2)}$

8. $\frac{x^2-2x-8}{9x^2-16}\cdot\frac{3x^2+10x+8}{x^2-16}$

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

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

9. $\frac{4x^2-20x+25}{x^2-4x}\cdot\frac{3x-12}{2x-5}$

$\frac{(2x-5)(2x-5)}{x(x-4)}\cdot\frac{3(x-4)}{2x-5}$

$\frac{3(2x-5)}{x}$