Honors Algebra 2
9.3 – 9.4 Review

Name: KEY
Date: _____ Period: _____

Simplify each of the following by performing the indicated operation:

1.) $\dfrac{x^{10}y^4}{33x^4} \div \dfrac{4y^{10}}{39x^5}$

- $\dfrac{x^{10}y^4}{33x^4} \cdot \dfrac{39x^5}{4y^{10}}$
- $\dfrac{39x^{15}y^4}{132x^4y^{10}}$
- $\dfrac{13x^{11}}{44y^6}$

2.) $\dfrac{4x+1}{x^2-4} - \dfrac{3}{x-2}\ \dfrac{(x+2)}{(x+2)}$

- $\dfrac{4x+1}{(x+2)(x-2)} - \dfrac{(3x+6)}{(x+2)(x-2)}$
- $\dfrac{x-5}{(x+2)(x-2)}$

3.) $\dfrac{x-3}{2x-8} \cdot \dfrac{6x^2-96}{x^2-9}$

- $\dfrac{x-3}{2(x-4)} \cdot \dfrac{6(x^2-16)}{(x+3)(x-3)}$
- $\dfrac{(x-3)}{2(x-4)} \cdot \dfrac{6(x-4)(x+4)}{(x+3)(x-3)}$
- $\dfrac{3(x+4)}{(x+3)}$

4.) $\dfrac{x^2+3x}{x^2+6x+8} \div \dfrac{4x^3+12x^2}{x^2+x-2}$

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

5.) $\dfrac{4x}{x+1} + \dfrac{5}{x} - \dfrac{2}{2x-3}$ $\quad x(x+1)(2x-3)$

- $\dfrac{4x^2(2x-3)}{x(x+1)(2x-3)} + \dfrac{(5x+5)(2x-3)}{x(x+1)(2x-3)} - \dfrac{(2x^2+2x)}{x(x+1)(2x-3)}$
- $\dfrac{8x^3-12x^2}{x(x+1)(2x-3)} + \dfrac{10x^2-5x-15}{x(x+1)(2x-3)} - \dfrac{(2x^2+2x)}{x(x+1)(2x-3)}$
- $\dfrac{8x^3-4x^2-7x-15}{x(x+1)(2x-3)}$

6.) $\dfrac{x^2+3x-4}{x^2-4x+3} \cdot \dfrac{3-x}{x+4}$

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

7. $(x+4)$ $\dfrac{x+3}{x^2-1} - \dfrac{x-5}{x^2+3x-4}$ $\cdot(x+1)$

$(x+1)(x-1)$ $\quad (x+4)(x-1)$

- $\dfrac{x^2+7x+12}{(x+1)(x-1)(x+4)} - \dfrac{(x^2-4x-5)}{(x+1)(x-1)(x+4)}$
- $\dfrac{11x+17}{(x+1)(x-1)(x+4)}$

8.) $\dfrac{\left(\dfrac{2}{3x+15}\right)}{4\left(\dfrac{2}{x+5}+\dfrac{1}{4x+20}\right)}$ $4(x+5)$

- $\dfrac{2}{3(x+5)} \div \left[\dfrac{8}{4(x+5)} + \dfrac{1}{4(x+5)}\right]$
- $\dfrac{2}{3(x+5)} \div \dfrac{9}{4(x+5)}$
- $\dfrac{2}{3(x+5)} \cdot \dfrac{4(x+5)}{9}$
- $\dfrac{8}{27}$

9.) $x+4$ $\dfrac{\dfrac{x+4}{1} - \dfrac{1}{x+4}}{\dfrac{x+11}{1} + \dfrac{48}{x-3}}$ $x-3$

- $\dfrac{x^2+8x+16}{x+4} - \dfrac{1}{x+4} \div \left[\dfrac{x^2+8x-33}{x-3} + \dfrac{48}{x-3}\right]$
- $\dfrac{x^2+8x+15}{x+4} \div \left[\dfrac{x^2+8x+15}{x-3}\right]$
- $\dfrac{x^2+8x+15}{x+4} \cdot \dfrac{x-3}{x^2+8x+15} \rightarrow \dfrac{x-3}{x+4}$

10.) $\dfrac{\dfrac{x^2+8x+15}{x^2+2x-6}}{\dfrac{x^2+2x-15}{x^2-2x-3}}$

- $\dfrac{(x+5)(x+3)}{(x+2)(x-2)} \div \dfrac{(x+5)(x-3)}{(x-3)(x+1)}$
- $\dfrac{(x+5)(x+3)}{(x+2)(x-2)} \cdot \dfrac{(x-3)(x+1)}{(x+5)(x-3)}$
- $\dfrac{(x+3)(x+1)}{(x+2)(x-2)}$

11.) A company has a preset fence package for a rectangular yard with the given length and width below. Find the perimeter of the fence.

Length = $\dfrac{(x-2)}{x}$

Width = $\dfrac{x}{(x+2)}$

- $P = 2l + 2w$
- $P = 2\left(\dfrac{x-2}{x}\right) + 2\left(\dfrac{x}{x+2}\right)$
- $P = \dfrac{2x-4}{x} + \dfrac{2x}{x+2}$
- $P = \dfrac{(x+2)(2x-4)}{x(x+2)} + \dfrac{2x^2}{x(x+2)}$
- $P = \dfrac{2x^2-8}{x(x+2)} + \dfrac{2x^2}{x(x+2)}$
- $P = \dfrac{4x^2-8}{x(x+2)}$