Algebra 2CP Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Rational Function Practice Test**

*Part I – All work on a separate piece of paper.*

*For 1-3, tell whether x and y show direct variation, inverse variation, or neither. If they are direct or inverse, name the constant of variation (k)*.

1.) $7xy=4$ 2.) $y=\frac{x}{12}$ 3.) $y=2x+1$

4.) If *y* varies inversely as *x* and *y* = 15 when *x* = 3, find *y* when *x* = 5.

5.) The time it takes you to get to campus varies inversely as your driving speed. Averaging 20 miles per hour in bad traffic, it takes you 1.5 hours to get to campus. How long would the trip take averaging 50 miles per hour?

6.) Simplify completely: $\frac{2x^{2}-5x-3}{4x^{2}-8x-5}$

7.) For what value(s) of *x* is the expression in number 6 undefined? (What can *x* not equal?)

8.) Simplify completely: $\frac{24x^{4}y^{3}}{9x^{5}y^{8}}÷\frac{48x^{5}y^{2}}{27x^{6}y^{8}}$

9.) Simplify completely: $\frac{x^{2}-x-20}{5x-25}∙\frac{x^{2}-25}{x^{2}+4x-5}$

10.) Simplify completely: $\frac{\frac{3y}{y^{2}-9}}{\frac{6}{y^{2}-6y+9}}$

11.) Simplify completely: $\frac{4}{5x}-\frac{4}{6x}+\frac{3}{10x}$

12.) Simplify completely: $\frac{2x}{x^{2}-x-12}-\frac{3}{x^{2}-5x+4}$