

Exam 1a Intermediate Algebra 2 804-203**Spring 2009****Name** _____

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Each problem is worth 16 points.

Perform the following operations and simplify the result:

1.
$$\frac{24x^2+10x-4}{16x^2-1} \div \frac{6x^2+x-2}{4x^2-4x+1} = \underline{\hspace{10em}}$$

2.
$$\frac{2y+5}{2y-3} - \frac{10y^2-5y-3}{6y^2-7y-3} + \frac{2y+4}{3y+1} = \underline{\hspace{10em}}$$

3. Express the following complex fraction as a simple rational expression in reduced form.

$$\frac{\frac{x}{x-3} - \frac{x}{x+3}}{\frac{3}{x^2-9} + \frac{1}{x+3}} = \underline{\hspace{10em}}$$

Solve the following equation for all real solutions.

4.
$$\frac{2}{2x-3} - \frac{16}{10x^2-17x+3} = \frac{4}{5x-1}$$

5. A swimming pool has two inlet pipes. The larger inlet can fill the pool twice as fast (i.e., in half the time) as the smaller inlet. If both inlets are used the pool fills in six hours. How long does each inlet acting alone take to fill the pool?