

Name: _____

Date: _____

HW Pre Calculus 11 6.4 Solving Rational Functions

1. Solve each of the following equations. Indicate any extraneous roots if there are any. Show your steps:

a) $\frac{4}{x} + \frac{3}{x+2} = 5$

b) $\frac{-2}{x+3} - \frac{5}{x} = 2$

$\frac{3}{x+2} - \frac{2}{x-1} = 5$

$\frac{2}{x+2} + \frac{1}{x} = 1$

c) $\frac{2}{y} = \frac{3}{y^2+2}$

d) $x + \frac{30}{x+8} = 3$

$$\frac{5}{3x-1} - \frac{9}{6x-1} = 2$$

$$\frac{5}{x+1} + \frac{4}{3} = \frac{x+1}{x-1}$$

$$\text{e) } \frac{3x}{x-2} + \frac{x}{x+2} = \frac{2x-1}{x+2}$$

$$\text{f) } \frac{2x-3}{x+2} - \frac{x+2}{x-1} = \frac{3x}{x-1}$$

$$\frac{x^2+6}{3} - \frac{7}{2} = \frac{x+10}{2}$$

$$\frac{2x-1}{2x+1} + \frac{x+1}{x+3} = \frac{3x-1}{2x+1} + \frac{1}{6}$$

$$\text{g) } \frac{2x-3}{x-1} - \frac{x-1}{x+2} = \frac{2x-5}{x+2} + \frac{2-x}{1-x}$$

$$\text{h) } \frac{3x^2}{x^2-1} + \frac{2x^2}{x^2+5x+6} = \frac{4}{x+3}$$

$$\frac{x-2}{x-3} + \frac{x-3}{x-2} = \frac{2x^2}{x^2-5x+6}$$

$$\frac{3x+1}{x^2-2+x} = \frac{2x-3}{x^2-x-6} - \frac{5}{x^2-4x+3}$$

2. Solve each of the following equations. Indicate any extraneous roots if any: For which value of "x" will

$$\frac{3+x}{4+x} \text{ and } \frac{6+x}{8+x} \text{ be equal?}$$

3. Solve for "k":

$$\frac{3}{x-1} + \frac{k}{x} + \frac{7}{x+1} = \frac{5x^2 - 4x + 5}{x^3 - x}$$

4. Jason and Thomas both work in a cleaning company. If they work separately, Jason can clean a house in 6 hours and Thomas can finish the same job in 5 hours. How much would they need if they worked together?

5. Solve for "x": $1 + \frac{1}{1 + \frac{1}{x} + \frac{1}{2x}} = \frac{7}{5}$