

Math 0408 – Intermediate Algebra
Rational Equations

Solve each of the following equations

1. $\frac{y}{2} + \frac{y}{4} + \frac{y}{6} = 3$

2. $\frac{1}{x} = \frac{1}{3} - \frac{2}{3x}$

3. $2 + \frac{5}{x} = \frac{3}{x}$

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

5. $\frac{2}{x-3} + \frac{x}{x^2-9} = \frac{4}{x+3}$

6. $\frac{2}{x+5} + \frac{3}{x+4} = \frac{2x}{x^2+9x+20}$

7. $\frac{2}{y^2-y} - \frac{6}{y^2-1} = 0$

Solutions

$$1. \frac{y}{2} + \frac{y}{4} + \frac{y}{6} = 3$$

$$y = \frac{3}{11}$$

$$2. \frac{1}{x} = \frac{1}{3} - \frac{2}{3x}$$

$$x = 5$$

$$3. 2 + \frac{5}{x} = \frac{3}{x}$$

$$x = -1$$

$$4. \frac{x+2}{x+1} = \frac{1}{x+1} + 2$$

No Solution

$$5. \frac{2}{x-3} + \frac{x}{x^2-9} = \frac{4}{x+3}$$

$$x = 18$$

$$6. \frac{2}{x+5} + \frac{3}{x+4} = \frac{2x}{x^2+9x+20}$$

$$x = \frac{-23}{3}$$

$$7. \frac{2}{y^2-y} - \frac{6}{y^2-1} = 0$$

$$y = \frac{1}{2}$$