

Solve each rational equation.

$$1. \frac{3}{x+2} + \frac{38}{x^2-4x-12} = \frac{x}{x-6}$$

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

$$3. \frac{x}{x+4} - \frac{x+34}{x^2+3x-4} = \frac{-7}{x-1}$$

1

Solve each rational equation.

ANSWERS

$$1. \frac{x-6}{x-6} \cdot \frac{3}{x+2} + \frac{38}{(x-6)(x+4)} = \frac{x}{x-6} \cdot \frac{x+2}{x+2}$$

$$2. \frac{(x+3)}{(x+3)} \cdot \frac{2x}{x^2-1} = \frac{4}{x^2+2x-3} \cdot \frac{x+1}{x+1}$$

$$3(x-6) + 38 = x(x+2)$$

$$x = -4, 5$$

$$3x - 18 + 38 = x^2 + 2x$$

$$3x + 20 = x^2 + 2x$$

$$0 = x^2 - x - 20$$

$$0 = (x-5)(x+4)$$

$$3. \frac{(x-1)}{(x-1)} \cdot \frac{x}{x+4} - \frac{x+34}{(x+4)(x-1)} = \frac{-7}{x-1} \cdot \frac{(x+4)}{(x+4)}$$

$$2x(x+3) = 4(x+1)$$

$$2x^2 + 6x = 4x + 4$$

$$\frac{2x^2 + 2x - 4}{2} = \frac{0}{2}$$

$$x^2 + x - 2 = 0$$

$$(x+2)(x-1) = 0$$

$$x(x-1) - (x+34) = -7(x+4)$$

$$x^2 - x - x - 34 = -7x - 28$$

$$x^2 - 2x - 34 = -7x - 28$$

$$x = -6, 1$$

$$x^2 + 5x - 6 = 0$$

$$(x+6)(x-1) = 0$$

$$x = -6$$

$$x = -2, 1$$

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$$x = -2$$

1