

Mar. 7, 2018

Sect. 6-4

Solving Rational Equations

Factor / Find LCD

Exclusions

Mult. by LCD (No Fractions)

Solve

Check Exclusions

Remember Sect. 6-1

Solve: $\frac{3}{x+5} = \frac{2}{x+1}$ $x \neq -5, -1$

$$3(x+1) = 2(x+5)$$

$$3x + 3 = 2x + 10$$

$$x + 3 = 10$$

$$x = 7 \quad \checkmark$$

$$\frac{6}{x} + \frac{x}{2} = \frac{4}{1} \quad x \neq 0$$

LCD: $2x$

$$2x \left(\frac{6}{x} \right) + 2x \left(\frac{x}{2} \right) = 2x(4)$$

$$12 + x^2 = 8x$$

$$x^2 - 8x + 12 = 0 \Rightarrow (x-6)(x-2) = 0$$
$$x = 6 \checkmark \text{ or } x = 2 \checkmark$$

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

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

$$x \neq 0, 1$$

$$\text{LCD: } x(x-1)$$

$$\cancel{x(x-1)} \left(\frac{2}{\cancel{x}} \right) + \cancel{x(x-1)} \left(\frac{6}{\cancel{x-1}} \right) = \cancel{x(x-1)} \left(\frac{6}{\cancel{x(x-1)}} \right)$$

$$2x - 2 + 6x = 6$$

$$2x - 2 + 6x = 6$$

$$8x - 2 = 6$$

$$8x = 8$$

~~$$x = 1$$~~

No Sol.