

Solve the rational equation $\frac{1}{x+6} + \frac{x}{x+9} - \frac{27}{x^2+15x+54} = 0$ and check your solution.

Answer:

$$\frac{1}{\cancel{x+6}} + \frac{x}{\cancel{x+9}} - \frac{27}{(\cancel{x+6})(\cancel{x+9})} = 0$$

$$\frac{1}{x+9} + \frac{x}{x+6} - \frac{27}{(x+6)(x+9)} = 0$$

$$x+9 + \frac{x}{x+6} - 27 = 0$$

$$x+9 + \frac{x}{x+6} - 27 = 0$$

$$\frac{x}{x+6} = 0$$

$$x = \quad \quad x = \quad$$

Check solution $x = 2$.

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} - \frac{\quad}{\quad} = 0$$

$$0 = 0 \quad \checkmark$$

Check solution $x = -9$.

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} - \frac{\quad}{\quad} = 0$$

$$\frac{\quad}{\quad} = 0$$