

Дробно-рационал. ур-я

$$\frac{f(x)}{g(x)} = 0 \Rightarrow \begin{cases} f(x) = 0 \\ g(x) \neq 0 \end{cases}$$

1) $\frac{54}{x} = \frac{9}{7}$

I способ: $\frac{54}{x} - \frac{9}{7} = 0$

$$\frac{54 \cdot 7 - 9x}{7x} = 0$$

$$\begin{cases} 54 \cdot 7 - 9x = 0 \\ 7x \neq 0 \end{cases}$$

$$\begin{cases} x = 42 \\ x \neq 0 \end{cases}$$

II способ:

$$9x = 54 \cdot 7 \quad | : 9$$

$$x = 42$$

ОДЗ: $x \neq 0$

2) $\frac{x-5}{2x+9} = 1$

$$x-5 = 2x+9$$

$$-x = 14$$

$$x = -14$$

проверка $\rightarrow 2x+9 \neq 0$

3) $\frac{x^2 + 4x - 21}{x^2 - 49} = 0$

$$x_{\min} = 3$$

$$\begin{cases} x^2 + 4x - 21 = 0 \\ x^2 - 49 \neq 0 \end{cases}$$

$$\begin{cases} x_1 = 3, x_2 = -7 \\ x \neq \pm 7 \end{cases}$$