

$$6) \frac{24x}{2x^2-3x+4} = \frac{12x}{x^2+x+2} + 5$$

$$\frac{12}{x+2/x+1} + 5 - \frac{24}{(2x+4/x-3)} = 0$$

$$y = x + \frac{2}{x}$$

$$\frac{12}{y+1} + 5 - \frac{24(y+1)}{(y+1)(2y-3)} = 0$$

$$\frac{[12(2y-3) + 5(y+1)(2y-3) - 24(y+1)]}{(y+1)(2y-3)} = 0$$

$$\frac{[24y-36 + 10y^2-15y+10y-15 - 24y-24]}{(y+1)(2y-3)} = 0$$

$$\frac{[10y^2-75-5y]}{(y+1)(2y-3)} = 0$$

$$2y^2 - y - 15 = 0 \quad y \neq -1 \quad y \neq \frac{3}{2}$$

$$D = 1 + 120 = 121$$

$$x_1 = \frac{1+11}{4} = \frac{10}{4} = \frac{5}{2}$$

$$x_2 = \frac{1-11}{4} = \frac{-10}{4} = -\frac{5}{2}$$

$$x + \frac{2}{x} = -\frac{5}{2} \quad | \cdot 2x$$

$$2x^2 + 4 + 5x = 0$$

$$D = 25 - 32$$

к нет

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

$$x^2 - 3x + 2 = 0$$

$$x_1 = 2$$

$$x_2 = 1$$

Отв: 1, 2

$$6.5) \frac{4x}{x^2+x+3} + \frac{5x}{x^2-5x+3} + \frac{3}{2} = 0$$

$$\frac{4}{x+1+3/x} + \frac{5}{x-5+3/x} + \frac{3}{2} = 0$$

$$y = x + \frac{3}{x}$$

$$\frac{4}{y+1} + \frac{5}{y-5} + \frac{3}{2} = 0$$

$$\frac{[8(y-5) + 10(y+1) + 3(y+1)(y-5)]}{2(y+1)(y-5)} = 0$$

$$\frac{[8y-40 + 10y+10 + 3y^2-15y+3y-15]}{2(y+1)(y-5)} = 0$$

$$\frac{[3y^2+6y-45]}{2(y+1)(y-5)} = 0$$

$$3y^2 + 6y - 45 = 0$$

$$y^2 + 2y - 15 = 0$$

$$y_1 = -5$$

$$y_2 = 3$$

$$x + \frac{3}{x} = -5$$

$$x^2 + 5x + 3 = 0$$

$$D = 25 - 12 = 13$$

$$x_1 = \frac{-5 + \sqrt{13}}{2}$$

$$x_2 = \frac{-5 - \sqrt{13}}{2}$$

$$x + \frac{3}{x} = 3$$

$$x^2 - 3x + 3 = 0$$

нет корней

Отв:  $x_1 = \frac{-5 + \sqrt{13}}{2}$   
 $x_2 = \frac{-5 - \sqrt{13}}{2}$

