

$$3) \frac{(x+3)}{(4x^2-9)} - \frac{(3-x)}{(4x^2+12x+9)} = \frac{2}{(2x-3)}$$

$$\frac{(x+3)}{(2x-3)(2x+3)} - \frac{(3-x)}{(2x+3)^2} - \frac{2}{(2x-3)} = 0$$

$$\frac{((x+3)(2x+3) - (3-x)(2x-3) - 2(2x+3)^2)}{(2x-3)(2x+3)^2} = 0$$

$$\frac{(2x^2+3x+6x+9-6x+9+2x^2-3x-8x^2-24x-18)}{(2x-3)(2x+3)^2} = 0$$

$$-4x^2-24x=0$$

$$4x^2+24x=0$$

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

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

$$x_1=0$$

$$x_2=-6$$

$$x_1=3/2$$

$$x_2=-3/2$$

Ответ: 0; -6.

$$3.5) \frac{30}{(x^2-1)} + \frac{(7-18x)}{(x^3+1)} = \frac{13}{(x^2-x+1)}$$

$$\frac{30}{(x-1)(x+1)} + \frac{(7-18x)}{(x+1)(x^2-x+1)} - \frac{13}{(x^2-x+1)} = 0$$

$$\frac{(30(x^2-x+1) + (7-18x)(x-1) - 13(x-1)(x+1))}{(x-1)(x+1)(x^2-x+1)}$$

$$\frac{(30x^2-30x+30+7x-7-18x^2+18x-13x^2-13x+13x+13)}{(x-1)(x+1)(x^2-x+1)}$$

$$= 0$$

$$\frac{(-x^2-5x+36)}{(x-1)(x+1)(x^2-x+1)}$$

$$x^2+5x-36=0$$

$$x_1=-9$$

$$x_2=4$$

$$x_1=1$$

$$x_2=-1$$

Ответ: -9; 4

