

Деление на x^2

$$1) (2x^2 - 3x + 1)(2x^2 + 5x + 1) = 9x^2$$

$$2) (x + 2)(x + 3)(x + 8)(x + 12) = 4x^2$$

Придти к виду, как в 1-ом

$$(x^2 + 14x + 24)(x^2 + 11x + 24) = 4x^2$$

$$((x^2 + 14x + 24)(x^2 + 11x + 24))/x^2 = 4$$

$$(x + 14 + 24/x) * (x + 11 + 24/x) = 4$$

$$x + 24/x = z$$

$$(z + 14)(z + 11) = 4$$

$$z^2 + 25z + 154 = 4$$

$$z^2 + 25z + 150 = 0$$

$$D = 625 - 600 = 25$$

$$z_1 = (-25 - 5)/2 = -15$$

$$z_2 = (-25 + 5)/2 = -10$$

$$x + 24/x + 15 = 0$$

$$x^2 + 15x + 24 = 0$$

$$D = 225 - 96 = 129$$

$$x_1 = (-15 + \sqrt{129})/2$$

$$x_2 = (-15 - \sqrt{129})/2$$

$$x^2 + 10x + 24 = 0$$

$$x_1 = -6$$

$$x_2 = -4$$

Ответ: $(-15 + \sqrt{129})/2; (-15 - \sqrt{129})/2; -6; -4.$



TIGER (TORA)

$$((2x^2 - 3x + 1)(2x^2 + 5x + 1))/x^2 = 9$$

$$((2x^2 - 3x + 1)/x) * (2x^2 + 5x + 1)/x = 9$$

$$(2x - 3 + 1/x) * (2x + 5 + 1/x) = 9$$

$$2x + 1/x = y$$

$$(y - 3)(y + 5) = 9$$

$$y^2 + 2y - 15 = 9$$

$$y^2 + 2y - 24 = 0$$

$$y_1 = -6$$

$$y_2 = 4$$

$$2x + 1/x = -6$$

$$2x^2 + 1 = -6x$$

$$2x^2 + 6x + 1 = 0$$

$$D = 9 - 2 = 7$$

$$x_1 = (-3 - \sqrt{7})/2$$

$$x_2 = (-3 + \sqrt{7})/2$$

$$2x^2 - 4x + 1 = 0$$

$$D = 4 - 2 = 2$$

$$x_1 = (2 - \sqrt{2})/2$$

$$x_2 = (2 + \sqrt{2})/2$$

Ответ: $(-3 - \sqrt{7})/2; (-3 + \sqrt{7})/2; (2 - \sqrt{2})/2; (2 + \sqrt{2})/2.$