

Неполная замена аргументов

$$(x^2 - x + 1)^4 - 6x^2(x^2 - x + 1)^2 + 5x^4 = 0$$

$$(x^2 - x + 1)^4 - 6x^2(x^2 - x + 1)^2 + 5x^4 = 0$$

$$y = (x^2 - x + 1)^2$$

$$y^2 - 6x^2y + 5x^4 = 0$$

$$x^2 = t$$

$$y^2 - 6ty + 5t^2 = 0$$

$$1 - 6t/y + 5t^2/y^2 = 0$$

$$1 - 6t/y + 5t^2/y^2 = 0$$

$$t/y = u$$

$$1 - 6u + 5u^2 = 0$$

$$u_1 = 1$$

$$u_2 = 1/5$$

$$t/y = 1$$

$$x^2 / (x^2 - x + 1)^2 = 1$$

$$x^2 / (x^2 - x + 1)^2 - 1 = 0$$

$$(x / (x^2 - x + 1) - 1)(x / (x^2 - x + 1) + 1) = 0$$

$$x / (x^2 - x + 1) - 1 = 0$$

$$x / (x^2 - x + 1) + 1 = 0$$

$$(x^2 - 1) / (x^2 - x + 1) = 0 \quad (x + x^2 - x + 1) / (x^2 - x + 1) = 0$$

$$x^2 = 1$$

$$(x^2 + 1) / (x^2 - x + 1) = 0$$

$$x = \pm 1$$

$$x^2 + 1$$

$$x^2 - x + 1 \neq 0$$

$$x^2 = -1$$

корней нет

$$x^2 / (x^2 - x + 1)^2 - 1/5 = 0$$

$$(x / (x^2 - x + 1) - \sqrt{1/5})(x / (x^2 - x + 1) + \sqrt{1/5}) = 0$$

$$x / (x^2 - x + 1) - \sqrt{1/5} = 0$$

$$x - \sqrt{1/5}(x^2 - x + 1) / (x^2 - x + 1) = 0$$

$$(x - x^2\sqrt{1/5} + x\sqrt{1/5} - \sqrt{1/5}) / (x^2 - x + 1) = 0 \quad | \cdot \sqrt{5}$$

$$(x\sqrt{5} - x^2 + x - 1) = 0$$

$$x\sqrt{5} - x^2 + x - 1 = 0 \quad | \cdot (-1)$$

$$x^2 - x - x\sqrt{5} + 1 = 0$$

$$x^2 + x(-1 - \sqrt{5}) + 1 = 0$$

$$D = (-1 - \sqrt{5})^2 - 4 = 1 + 2\sqrt{5} + 5 - 4 = 2 + 2\sqrt{5}$$

$$x_1 = -(-1 - \sqrt{5}) + \sqrt{2 + 2\sqrt{5}} / 2 = (1 + \sqrt{5} + \sqrt{2 + 2\sqrt{5}}) / 2$$

$$x_2 = -(-1 - \sqrt{5}) - \sqrt{2 + 2\sqrt{5}} / 2 = (1 + \sqrt{5} - \sqrt{2 + 2\sqrt{5}}) / 2$$

$$x / (x^2 - x + 1) + \sqrt{1/5} = 0$$

$$x + \sqrt{1/5}(x^2 - x + 1) = 0 \quad | \cdot \sqrt{5}$$

$$x^2 - x + x\sqrt{5} + 1 = 0$$

$$x^2 + x(-1 + \sqrt{5}) + 1 = 0$$

$$D = (-1 + \sqrt{5})^2 - 4 = 1 - 2\sqrt{5} + 5 - 4 = 2 - 2\sqrt{5}$$

$$x_3 = -(-1 + \sqrt{5}) + \sqrt{2 - 2\sqrt{5}} / 2 = (1 - \sqrt{5} + \sqrt{2 - 2\sqrt{5}}) / 2$$

$$x_4 = -(-1 + \sqrt{5}) - \sqrt{2 - 2\sqrt{5}} / 2 = (1 - \sqrt{5} - \sqrt{2 - 2\sqrt{5}}) / 2$$



$$x - x^2\sqrt{1/5} + x\sqrt{1/5} - \sqrt{1/5} = 0 \quad | \cdot \sqrt{5}$$

$$x\sqrt{5} - x^2 + x - 1 = 0$$