

Pisana provjera znanja
Kvadratna jednadžba

BODOVI: / 20

1) Riješi jednadžbe:

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

$4x(x+6) = 0 / :4$

$x(x+6) = 0$

$x_1 = 0$

$x+6 = 0$

$x_2 = -6$

b) $\frac{1}{3}x^2 - 27 = 0$

$\frac{1}{3}x^2 = 27 / \cdot 3$

$x^2 = 81 / \sqrt{\quad}$

$x = \pm 9$

c) $-3x^2 + 5x + 11 = 0$

$x_{1,2} = \frac{-5 \pm \sqrt{25 + 4 \cdot 3 \cdot 11}}{-6}$

$x_{1,2} = \frac{-5 \pm \sqrt{25 + 132}}{-6}$

$x_{1,2} = \frac{-5 \pm \sqrt{157}}{-6}$

2) Rješavajući sljedeću jednadžbu odredi zbroj i umnožak rješenja:

$2x^2 - 3x + 1 = 0$

$x-1 = 0$

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

$x_2 = 1$

$x(2x-1) - (2x-1) = 0$

$x_1 + x_2 = \frac{1}{2} + 1$

$2(x-1) - (x-1) = 0$

$= \frac{3}{2}$

$2x-1 = 0$

$2x = 1 / :2$

$x_1 = \frac{1}{2}$

$x_1 \cdot x_2 = \frac{1}{2} \cdot 1$

$= \frac{1}{2}$

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3) Riješi jednadžbu:

$\frac{x+56}{4x^2-16x} + \frac{1}{3x^2+3x} = \frac{18}{12x^2+4x}$

$\frac{x+56}{4x(x-4)} + \frac{1}{3x(3x+1)} = \frac{18}{4x(3x+1)} / \cdot 12x(x-4)(3x+1) \neq 0$

$3(3x+1)(x+56) + 4(x-4) = 54(x-4)$

$x \neq 0$

$x \neq 4$

$x \neq -\frac{1}{3}$

$9(3x^2 + 168x + x + 56) + 4x - 16 = 54x - 216$

$9x^2 + 504x + 3x + 168 + 4x - 16 = 54x - 216$

$9x^2 + 504x + 3x + 4x - 54x = -216 - 168 + 16$

$9x^2 + 457x = -368$

$9x^2 + 457x + 368 = 0$

$x_{1,2} = \frac{-457 \pm \sqrt{457^2 - 4 \cdot 9 \cdot 368}}{2 \cdot 9}$

$x_{1,2} = \frac{-457 \pm \sqrt{195601}}{18}$

$x_1 = 0,82, x_2 = 49,96$

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