

① Izračunaj

③ a) $3x^2 + x = 0$

$x(3x+1) = 0$

$x_1 = 0$

$x_2 = -\frac{1}{3}$

b) $2x^2 + 1 = 0$

$2x^2 = -1$

$x^2 = -\frac{1}{2}$

$x = \pm \frac{\sqrt{2}}{2}i$

c) $3x^2 - 2x - 3 = 0$

$x_{1,2} = \frac{2 \pm \sqrt{4+60}}{6}$

$x_{1,2} = \frac{2 \pm 8}{6}$

$x_1 = 1$

$x_2 = -\frac{3}{5}$

② Riješi: jednačinu

③ $\frac{x+1}{2x^2-3x} - \frac{4x+1}{4x^2+6x} = \frac{10}{4x^2-9}$

$x \neq 0$
 $x \neq \frac{3}{2}$
 $x \neq -\frac{3}{2}$

$\frac{x+1}{2x^2-3x} - \frac{4x+1}{4x^2+6x} - \frac{10}{4x^2-9} = 0$

$\frac{2(2x+3)(x+1) - (2x-3)(4x+1) - 20x}{2x(2x-3)(2x+3)} = 0$

$\frac{-4x^2 + 0 + 9}{2x(2x-3)(2x+3)} = 0$

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

$\frac{-(2x-3) \cdot 1}{2x(2x-3)}$

$\frac{-1}{2x}$

trdnja nije

točna

③ Riješi iracionalne jednačbe

$$\textcircled{4} \quad \sqrt{12x+2} + \sqrt{8x+4} = \sqrt{16x} + \sqrt{2x+3}$$

$$12x+2 + 2\sqrt{(12x+2) \cdot (8x+4)} + 8x+4 = 16x + 2\sqrt{16x \cdot (4x+6)}$$

$$20x+6 + 2\sqrt{96x^2+64x+8} = 20x + 2\sqrt{64x^2+96x+16} \quad (+1)$$

$$2\sqrt{96x^2+64x+8} = 2\sqrt{64x^2+96x+16}$$

$$96x^2+64x+8 = 64x^2+96x+16 \quad (+1)$$

$$32x^2 - 32x + 8 = 0$$

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

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

$$x = \frac{1}{2} \quad (+1)$$

provjera

$$\sqrt{12 \cdot \frac{1}{2} + 2} + \sqrt{8 \cdot \frac{1}{2} + 4} = \sqrt{16 \cdot \frac{1}{2}} + \sqrt{4 \cdot \frac{1}{2} + 6}$$

$$4\sqrt{2} = 4\sqrt{2} \quad (+1)$$

④ Skrati razlomke

$$\textcircled{a)} \quad \frac{5x^2+x-4}{5x^2-9x+4}$$

$$\frac{5x^2+5x-4x-4}{5x^2-4x-5x+4} \quad (+1)$$

$$\frac{5x(x+1)-4(x+1)}{x(5x-4)-(5x-4)}$$

$$\frac{(x+1)(5x-4)}{(5x-4)(x-1)}$$

$$\frac{x+1}{x-1} \quad (+1)$$

b)

$$\frac{10x^2-6x}{5x^2+2x-3}$$

$$\frac{2x(5x-3)}{5x^2+5x-3x-3} \quad (+1)$$

$$\frac{2x(5x-3)}{5x(x+1)-3(x+1)}$$

$$\frac{2x(5x-3)}{(x+1)(5x-3)}$$

$$\frac{2x}{x+1} \quad (+1)$$

5) Umnožak dvaju uzastopnih cijelih brojeva je 462. Koji su to brojevi?

$$\begin{aligned}x(x+1) &= 462 \\x^2 + x &= 462 \quad (+1) \\x^2 + x - 462 &= 0 \\x_{1,2} &= \dots\end{aligned}$$

$$\begin{aligned}x_1 &= 21 \\x_2 &= -22 \quad (+1)\end{aligned}$$

Radi se o brojevima 21, 22 ili -22, -21

6) Mijela posjeduje polje modroj jediću. Širina polja je 5m manja od njegove dužine. Površina polja je 204 m^2

- a) Koliko je polje široko i dugačko
- b) Znaš li što je modri jediću

a) $a = b - 5 \quad (+1)$
 $P = a \cdot b$

$$\begin{aligned}204 &= (b-5) \cdot b \\b^2 - 5b - 204 &= 0 \\x_{1,2} &= \frac{5 \pm 29}{2}\end{aligned}$$

$$\begin{aligned}x_1 &= 17 \quad (+1) \\x_2 &= -12 \\&\text{ne može biti: -}\end{aligned}$$

$$\begin{aligned}a &= 17 - 5 \quad (+1) \\a &= 12 \text{ m}\end{aligned}$$

Polje je dugačko 17m, a široko 12m

b) Da to je cvijet / Ne ne znam / Ne znam
(+1)

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