LINEARNE JEDNAČINE

Vježba

Evo nekih zadataka za vježbu!!!

ZADACI

Riješi jednačine

1) $(3x – 1)^2$-5$(2x + 1)^2 = (x – 1)^2 – (6x - 3)(2x + 1)$

$$(3x-1)^2 - 5(2x+1)^2 = (x-1)^2 - (6x-3)(2x+1)$$
$$9x^2 - 6x + 1 - 20x^2 - 20x - 5 = x^2 - 2x + 1 - 12x^2 - 6x + 6x + 3$$
$$-24x = 8$$
$$x = -\frac{1}{3};$$

2) $(x – 3)(x + 4) – 2(3x – 2) = (x – 4)^2$

$$(x-3)(x+4) - 2(3x-2) = (x-4)^2$$
$$x^2 + 4x - 3x - 12 - 6x + 4 = x^2 - 8x + 16$$
$$3x = 24$$
$$x = 8;$$

3) $(x + 5)(x + 2) – 3(4x - 3) = (x - 5)^2$

$$(x+5)(x+2) - 3(4x-3) = (x-5)^2$$
$$x^2 + 2x + 5x + 10 - 12x + 9 = x^2 - 10x + 25$$
$$5x = 6$$
$$x = \frac{6}{5};$$

4) $\dfrac{4+x}{8} = 2 - \dfrac{3-4x}{5}$

$$\dfrac{4+x}{8} = 2 - \dfrac{3-4x}{5}$$
$$20 + 5x = 80 - 24 + 32x$$
$$-27x = 36$$
$$x = -\dfrac{4}{3};$$

5) $x - \dfrac{2-x}{3} = 1 + \dfrac{x}{2}$

$$x - \dfrac{2-x}{3} = 1 + \dfrac{x}{2}$$
$$6x - 4 + 2x = 6 + 3x$$
$$5x = 10$$
$$x = 2;$$

6) $\dfrac{3}{x} - \dfrac{1}{6-2x} = \dfrac{2}{3x-x^2}$

Pišemo uslove: *3-x ≠ 0 → x ≠ 3*

$$\dfrac{3}{x} - \dfrac{1}{6-2x} = \dfrac{2}{3x-x^2}$$
$$\dfrac{3}{x} - \dfrac{1}{2(3-x)} = \dfrac{1}{x(3-x)} \quad \Big/ \cdot 2x(3-x)$$
$$2(3-x) \cdot 3 - x = 2$$
$$18 - 6x - x = 2$$
$$-7x = -14$$
$$x = 2;$$

7) $\dfrac{3}{x-1} = \dfrac{2-x}{x-x^2} - \dfrac{1}{2x}$

Pišemo uslove: $x - 1 \neq 0 \rightarrow x \neq 1$ i $x \neq 0$

$$\dfrac{3}{x-1} = \dfrac{2-x}{x-x^2} - \dfrac{1}{2x}$$

$$\dfrac{3}{x-1} = \dfrac{x-2}{x(x-1)} - \dfrac{1}{2x} \quad\Big/ \cdot 2x(x-1)$$

$$6x = 2x - 4 - x + 1$$

$$5x = -3$$

$$x = -\dfrac{3}{5};$$

Domaći zadatak !!!

Riješi jednačine

- $\quad 4(x-1)(x-3) - 3(x+1) = (2x-3)^2$

- $\quad 2 - 3x + \dfrac{1-2x}{5} = 1 - \dfrac{7x-5}{2}$

- $\quad \dfrac{2}{x} + \dfrac{2}{x^2-x} = \dfrac{5}{3x-3}$