

JEDNADŽBE

1.) Izrazi a iz izraza : $\frac{a-b}{c+a} = b$

$$a-b = bc + ba$$

$$a - ab = bc + b$$

$$a(1-b) = b(c+1)$$

$$a = \frac{b(c+1)}{1-b}$$

2.) $(2x-3)^2 - 4x \cdot (x-2) = 5x + 9$

$$\cancel{4x^2} - \underline{12x} + 9 - \cancel{4x^2} + \underline{8x} = 5x + 9$$

$$-9x = 0$$

$$x = 0$$

3.) $\frac{5}{\frac{x^2-3x}{x(x-3)}} + \frac{2x-1}{2x} = 1 \quad / \cdot 2x \cdot (x-3) \quad \underline{x \neq 0, 3}$

$$2 \cdot 5 + (2x-1) \cdot (x-3) = 2x \cdot (x-3)$$

$$10 + \cancel{2x^2} - 6x - x + 3 = \cancel{2x^2} - 6x$$

$$-x = -13$$

$$\underline{\underline{x = 13}}$$

4.) $a^2 \cdot x - 1 = x + a$

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

$$x(a^2 - 1) = a + 1 \quad / : (a^2 - 1) \quad a^2 \neq 1 \quad a \neq \pm 1$$

$$a \neq \pm 1 \quad x = \frac{a+1}{(a+1)(a-1)} = \frac{1}{a-1}$$

$$a = 1 \quad x - 1 = x + 1 \quad \rightarrow \text{neima } x$$

$$a = -1 \quad x - 1 = x - 1 \quad \rightarrow \text{svaka } x$$

NEJEDNADŽBE

$$1.) \frac{5x-7}{4} - \frac{x-6}{8} \leq \frac{x+3}{2} - x \quad | \cdot 8$$

$$2(5x-7) - (x-6) \leq 4(x+3) - 8x$$

$$10x-14 - x+6 \leq 4x+12 - 8x$$

$$9x \leq 20$$

$$x \leq \frac{20}{9}$$

$$x \in \left(-\infty, \frac{20}{9}\right]$$

$$2.) \begin{cases} 2x-5 \leq 4x+1 \\ 7x-2 < 3x-6 \end{cases}$$

$$-2x \leq 6$$

$$4x < -4$$

$$x \geq -3$$

$$x < -1$$



$$x \in [-3, -1)$$

$$3.) (2x-1) \cdot (3-x) < 0$$

$$-\left(\frac{1}{2}\right) + \quad + (3) -$$

	$-\infty$	$\frac{1}{2}$	3	∞
$2x-1$	-	+	+	+
$3-x$	+	+	-	-
	-	+	-	-

$$x \in \left(-\infty, \frac{1}{2}\right) \cup (3, \infty)$$

$$4.) \frac{2x}{x-5} > 3$$

$$\frac{2x - 3(x-5)}{x-5} > 0$$

$$\frac{15-x}{x-5} > 0$$

	$-\infty$	5	15	∞
$15-x$	+	+	0	-
$x-5$	-	0	+	+
	-	-	+	+

$$x \in (5, 15)$$

ABSOLUTNA VRIJEDNOST

1.) a) $a = -3, b = 2$. $||b| - |a|| = ||-3| - |2|| = |3 - 2| = |1| = 1$

b) $|\pi - 2| + |\pi - 5| = \pi - 2 + 5 - \pi = 3$

2.) $|x + 5| = 2x - 1$

$x \geq -5$
 $x + 5 = 2x - 1$
 $-x = -6$
 $x = 6$

$x < -5$
 $x + 5 = -2x + 1$
 $3x = -4$
 $x = -\frac{4}{3}$

3.) $|4x - 3| < 2$

$-2 < 4x - 3 < 2$

$1 < 4x < 5$

$\frac{1}{4} < x < \frac{5}{4}$

$x \in \left(\frac{1}{4}, \frac{5}{4} \right)$

4.) $|7 - x| \geq 3$

$7 - x \leq -3$

$-x \leq -10$

$x \geq 10$

$7 - x \geq 3$

$-x \geq -4$

$x \leq 4$

$x \in \langle -\infty, 4 \rangle \cup [10, \infty)$