

VAJA PRED 1. POZ

1. Poenostavi.

$$(x+8)^2 = \underline{x^2 + 16x + 64}$$

$$(a+3)(a-3) = \underline{a^2 - 9}$$

$$(2x-3)^2 = \underline{4x^2 - 12x + 9}$$

$$(3x-1)(3x+1) = \underline{9x^2 - 1}$$

$$(7x+8)(-4+3x) = \underline{-28x + 21x^2 - 32 + 24x} = \underline{21x^2 - 4x - 32}$$

2. Zapiši kot produkt.

$$3ab - 3bc = \underline{3b(a-c)}$$

$$8xy + 6xyz = \underline{2xy(4+3z)}$$

$$12c + 6 = \underline{6(2c+1)}$$

3. Dan je izraz $(a-1)^2 - (a-1)(a+1) =$

a) Izraz najprej poenostavi.

$$\begin{aligned} & a^2 - 2a + 1 - (a^2 - 1) = \\ & = \cancel{a^2} - 2a + 1 - \cancel{a^2} + 1 = \\ & = \underline{\underline{-2a + 2}} \end{aligned}$$

b) Izračunaj vrednost izraza za $a = -\frac{1}{2}$.

$$\begin{aligned} -2a + 2 &= -2 \cdot \left(-\frac{1}{2}\right) + 2 = \\ &= 1 + 2 = \underline{\underline{3}} \end{aligned}$$

4. Reši enačbe in odgovori na vprašanja.

A $4x + 5 = 3x + 10$

$$4x - 3x = 10 - 5$$

$$x = 5$$

$$R = \{5\}$$

B $y + 9 = 9 + y$

$$0 = 0$$

$$R = \mathbb{R}$$

C $x + 11 = 2y$

$$x$$

D $3x + 7 = 3x + 6$

$$7 = 6$$

$$\cancel{x}$$

$$R = \{\}$$

Katera enačba ima neskončno rešitev? B

Katera enačba nima rešitve? D

5. Reši enačbe, napiši množico rešitev in naredi preizkus, kjer piše.

$$5x - 2 = 3x + 4$$

$$5x - 3x = 4 + 2$$

$$2x = 6$$

$$x = 3$$

$$R = \{3\}$$

$$L = 5 \cdot 3 - 2 = 15 - 2 =$$

$$= 13$$

$$D = 3 \cdot 3 + 4 = 9 + 4 =$$

$$= 13$$

$$3x - (4 - x) = 2(x - 3)$$

$$3x - 4 + x = 2x - 6$$

$$4x - 4 = 2x - 6$$

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

$$2x = -2 \quad /: (2)$$

$$x = -1$$

$$R = \{-1\}$$

$\frac{x}{4} + 2 = \frac{x}{3} \quad \cdot 12$ $3x + 24 = 4x$ $3x - 4x = -24$ $-x = -24 \quad : (-1)$ $x = 24$ $R = \{24\}$	$L = \frac{24}{4} + 2 = 6 + 2 = 8$ $D = \frac{24}{3} = 8$	$3a - (5a - 1) = (a - 1) + (2a - 3)$ $3a - 5a + 1 = a - 1 + 2a - 3$ $-2a + 1 = 3a - 4$ $-2a - 3a = -4 - 1$ $-5a = -5 \quad : (-5)$ $a = 1$ $R = \{1\}$
$2(x - 1) + 5 - x = 3 + x$ $2x - 2 + 5 - x = 3 + x$ $x + 3 = 3 + x$ $0 = 0$ $R = \mathbb{R}$	$\frac{x}{5} + \frac{x}{2} = 7 \quad \cdot 10$ $2x + 5x = 70$ $7x = 70 \quad : 7$ $x = 10$ $R = \{10\}$	$\frac{(x-4)^2}{3} + \frac{1-x}{5} - \frac{x}{15} = \frac{5x^2-1}{15} \quad \cdot 15$ $(x^2 - 8x + 16) \cdot 5 + (1-x) \cdot 3 - x = 5x^2 - 1$ $5x^2 - 40x + 80 + 3 - 3x - x = 5x^2 - 1$ $-44x + 83 = -1$ $-44x = -84$ $x = \frac{84}{44} = \frac{21}{11}$ $R = \left\{1 \frac{10}{11}\right\}$
$-3\frac{1}{7} - 2x + 1\frac{3}{4}x = -5\frac{1}{14}$ $-\frac{22}{7} - 2x + \frac{7}{4}x = -\frac{71}{14} \quad \cdot 28$ $-88 - 56x + 49x = -142$ $-88 - 7x = -142$ $-7x = -142 + 88$ $-7x = -54$ $x = \frac{54}{7} = 7\frac{5}{7}$	$x(x-3)(x+2) = 0$ \downarrow $x_1 = 0 \quad \downarrow$ $x_2 - 3 = 0 \quad \downarrow$ $x_2 = 3$ $x + 2 = 0 \quad \downarrow$ $x_3 = -2$ $R = \{-2, 0, 3\}$	$(3m-1)(2m+2)\left(m-\frac{1}{3}\right) = 0$ $\downarrow \quad \downarrow \quad \downarrow$ $3m-1=0 \quad 2m+2=0 \quad m-\frac{1}{3}=0$ $3m=1 \quad 2m=-2 \quad m_1=\frac{1}{3}$ $m_1=\frac{1}{3} \quad m_2=-1 \quad m_3=\frac{1}{3}$ $R = \{-1, \frac{1}{3}\}$

6. Iz obrazca izrazi neznanke.

$o = a + b + c; \quad c = ?$ $a + b + c = o$ $c = o - a - b$	$A = F \cdot s; \quad F = ?$ $F \cdot s = A \quad : s$ $F = \frac{A}{s}$	$P = 2(ab + bc + ac); \quad a = ?$ $2(ab + bc + ac) = P \quad : 2$ $ab + bc + ac = \frac{P}{2}$ $ab + ac = \frac{P}{2} - bc$ $a(b+c) = \frac{P}{2} - bc \quad : (b+c)$ $a = \frac{\frac{P}{2} - bc}{b+c}$
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7. Če od petkratnika nekega števila odštejemo 2, dobimo enako, kot če njegovemu trikratniku prištejemo 6. Katero število je to?

$$5x - 2 = 3x + 6$$

$$5x - 3x = 6 + 2$$

$$2x = 8$$

$$x = 4$$

8. Miha je 6 let mlajši od 15-letnega Petra. Pred koliko leti je bil Miha štirikrat mlajši od Petra?

	danes	pred x leti
Miha	$15 - 6 = 9$	$9 - x$
Peter	15	$15 - x$

$$4 \cdot (9 - x) = 15 - x$$

$$36 - 4x = 15 - x$$

$$-4x + x = 15 - 36$$

$$-3x = -21$$

$$x = 7$$