

ENAČBE PREMICE

Ločimo tri oblike enačbe premice:

➤ **EKSPLICITNA** $\longrightarrow y = k \cdot x + n$

➤ **IMPLICITNA** $\longrightarrow ax + by - c = 0$

➤ **ODSEKOVNA** $\longrightarrow \frac{x}{m} + \frac{y}{n} = 1, m, n \neq 0$

1. Enačbo dane premice zapiši v implicitni obliki.

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

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$$y = -\frac{2}{3}x + 2 \quad / \cdot 3$$

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

$$2x + 3y - 6 = 0$$

2. Enačbo dane premice zapiši v odsekovni obliki

$$f(x) = 5x - 2$$

$$y = 5x - 2$$

$$y - 5x = -2 \quad / : (-2)$$

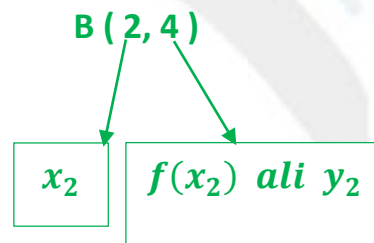
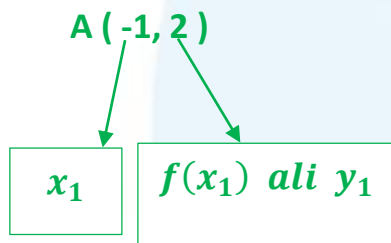
$$-\frac{y}{2} + \frac{5x}{2} = 1$$

$$\frac{5x}{2} - \frac{y}{2} = 1$$

$$\frac{x}{\frac{2}{5}} - \frac{y}{2} = 1$$

3. Skozi dani točki položi premico in zapiši njeno enačbo v vseh treh oblikah.

A (-1, 2) in B (2, 4)



$$k = \frac{f(x_2) - f(x_1)}{x_2 - x_1}$$

$$k = \frac{4 - 2}{2 - (-1)}$$

$$k = \frac{2}{3}$$

$$f(x) = k \cdot x + n$$

$$2 = \frac{2}{3} \cdot (-1) + n$$

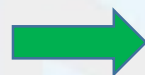
$$2 = -\frac{2}{3} + n$$

$$n = 2 + \frac{2}{3}$$

$$n = \frac{6}{3} + \frac{2}{3}$$

$$n = \frac{8}{3} = 2\frac{2}{3}$$

$$y = \frac{2}{3} \cdot x + 2\frac{2}{3}$$

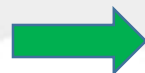


eksplicitna oblika

$$y = \frac{2}{3} \cdot x + 2\frac{2}{3} \quad / \cdot 3$$

$$3y = 2x + 8$$

$$2x - 3y + 8 = 0$$



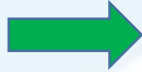
implicitna oblika

$$2x - 3y + 8 = 0$$

$$2x - 3y = -8 \quad / : (-8)$$

$$-\frac{2x}{8} + \frac{3y}{8} = 1$$

$$-\frac{x}{4} + \frac{y}{\frac{8}{3}} = 1$$



odsekovna oblika

Premici z enačbama $y = k_1 \cdot x + n$ in $y = k_2 x + n$ sta:

- **vzporedni** natanko takrat, ko imata enaka smerna koeficienta $k_1 = k_2$,
- **pravokotni** natanko takrat, ko za njuna smerna koeficienta velja $k_1 \cdot k_2 = -1$

4. Zapiši enačbo premice, ki poteka skozi točko A $(\frac{2}{3}, 2)$ in je vzporedna premici $y = -3x + 2$.

$$y = -3x + 2$$



$$k = -3$$

$$k_1 = k_2$$

$$y = k \cdot x + n \quad \text{in} \quad A(\frac{2}{3}, 2)$$

$$2 = -3 \cdot \frac{2}{3} + n$$

$$n = 2 + 2$$

$$n = 4$$

$$y = k \cdot x + n$$

$$y = -3 \cdot x + 4$$

Enačbi $y = -3x + 2$ in $y = -3 \cdot x + 4$ sta vzporedni, ker imata enak smerni koeficient.

5. Določi a tako, da bosta premici $y = 2 - 5x$ in $ax + (a - 2)y + 1 = 0$.

$$y = 2 - 5x$$

$$y = -5 \cdot x + 2$$

$$k_1$$

$$ax + (a - 2)y + 1 = 0$$

$$(a - 2)y = -ax - 1$$

$$y = -\frac{a}{(a-2)}x - \frac{1}{(a-2)}$$

$$k_2$$

Da bosta premici vzporedni morata imeti enaka smerna koeficienta

$$k_1 = k_2$$

$$-5 = -\frac{a}{(a-2)}$$

$$\frac{a}{(a-2)} = 5 \quad / \cdot (a-2)$$

$$a = 5 \cdot (a-2)$$

$$a = 5a - 10$$

$$a - 5a = -10$$

$$-4a = -10$$

$$a = \frac{10}{4} = \frac{5}{2} = 2\frac{1}{2}$$

5. Zapiši enačbo pravokotnice na premico $y = 2x - 3$, ki poteka skozi točko $A(-2, 3)$.

$$y = 2x - 3$$



$$k_1 = 2$$

$$k_1 \cdot k_2 = -1$$

$$2 \cdot k_2 = -1$$

$$k_2 = -\frac{1}{2}$$

$$y = k \cdot x + n$$

$$3 = -\frac{1}{2} \cdot (-2) + n$$

$$3 = 1 + n$$

$$n = 2$$

$$y = -\frac{1}{2} \cdot x + 2$$