



Ime in Priimek: _____

Naloga 1:

9

Zapiši predpis linearne funkcije $f(x) = kx + n$, če poznamo:

znan k in ena vrednost

a) $k = 2, \quad f(3) = 1$

b) $k = -3, \quad f(-2) = 4$

c) $k = \frac{1}{2}, \quad f(4) = 5$

znan n in ena vrednost

d) $n = 3, \quad f(2) = 11$

e) $n = -1, \quad f(-3) = 5$

f) $n = 4, \quad f(6) = 0$

znani dve vrednosti

g) $f(1) = 3, \quad f(4) = 9$

h) $f(-2) = 7, \quad f(3) = -3$

i) $f(-4) = -1, \quad f(2) = 2$

Naloga 2:

10

V isti koordinatni sistem nariši grafe linearnih funkcij. Za vsako funkcijo zapiši tudi ničlo in začetno vrednost.

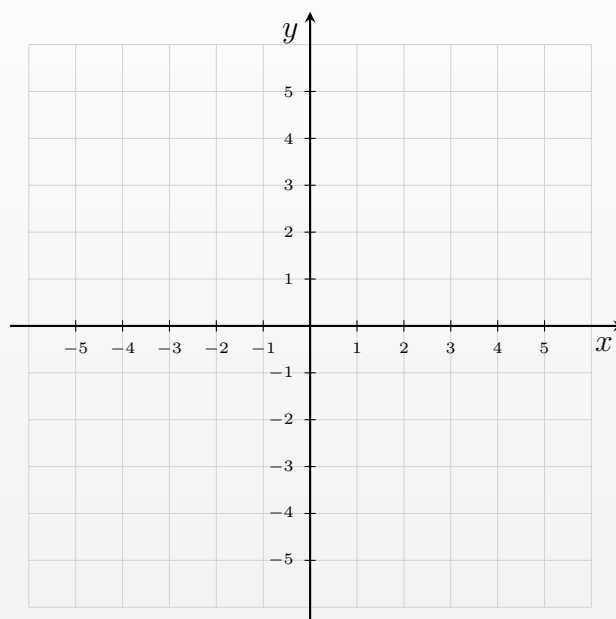
a) $f(x) = 2x - 3$

b) $g(x) = -x + 4$

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

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

e) $j(x) = -2x$

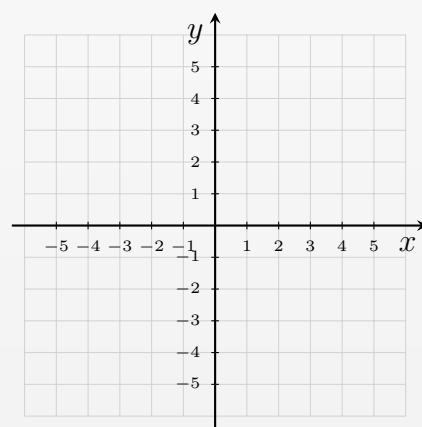
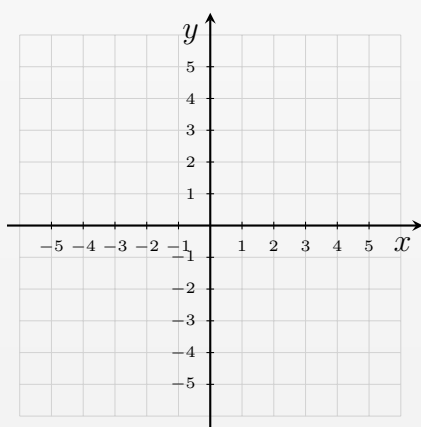
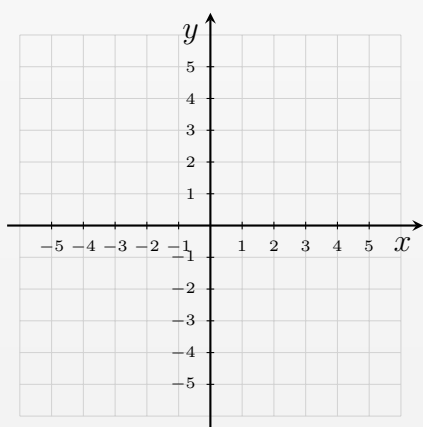


Enačbo premice zapiši še v ostalih dveh oblikah (eksplicitna $y = kx + n$, implicitna $ax + by + c = 0$, segmentna $\frac{x}{m} + \frac{y}{n} = 1$). Premico nariši in zapiši enačbo vzporednice, ki poteka skozi točko T .

a) $2x - y - 4 = 0, \quad T(1, 5)$

b) $y = -\frac{3}{4}x + 3, \quad T(-4, 1)$

c) $\frac{x}{3} + \frac{y}{-2} = 1, \quad T(3, 4)$



Izračunaj presek premic p in q .

a) $p: y = 2x - 1, \quad q: y = -x + 5$

b) $p: y = 3x + 4, \quad q: y = x - 2$

c) $p: x + y = 7, \quad q: 2x - y = 2$

d) $p: 2x + 3y - 12 = 0, \quad q: x - y + 4 = 0$

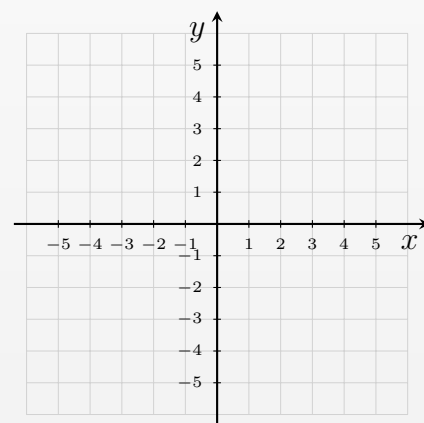
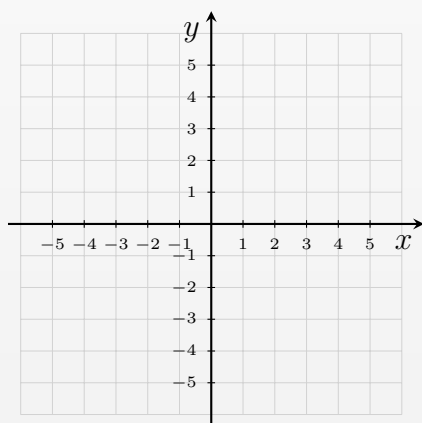
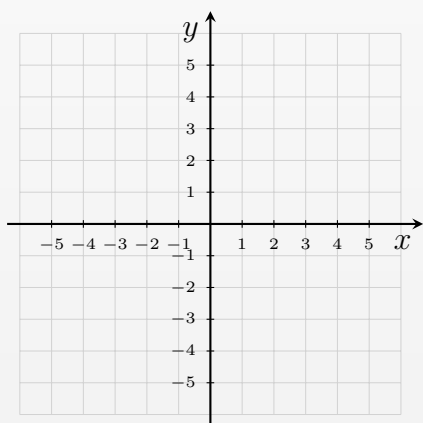
e) $p: y = \frac{1}{2}x + 3, \quad q: 3x + 2y - 14 = 0$

Premico nariši, izračunaj koordinati presečišč s koordinatnima osema in ploščino trikotnika, ki ga premica oklepa s koordinatnima osema.

a) $y = -2x + 6$

b) $3x - 4y + 12 = 0$

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



Izračunaj, za katere x leži premica p nad oz. pod premico q . Rešitev zapiši z intervalom.

a) Kdaj leži premica $p : y = 2x - 1$ **nad** premico $q : y = -x + 5$?

b) Kdaj leži premica $p : y = -\frac{1}{2}x + 4$ **pod** premico $q : y = x - 2$?

c) Kdaj leži premica $p : 2x + y - 3 = 0$ **nad** premico $q : x - y + 6 = 0$?

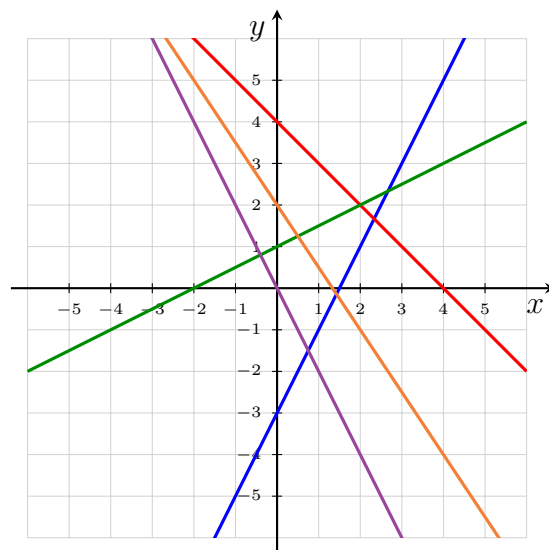
REŠITVE S POSTOPKI

Analiza Naloge 1: – Predpis linearne funkcije

- a) $2 \cdot 3 + n = 1 \Rightarrow n = -5$, $f(x) = 2x - 5$
- b) $-3 \cdot (-2) + n = 4 \Rightarrow 6 + n = 4 \Rightarrow n = -2$, $f(x) = -3x - 2$
- c) $\frac{1}{2} \cdot 4 + n = 5 \Rightarrow 2 + n = 5 \Rightarrow n = 3$, $f(x) = \frac{1}{2}x + 3$
- d) $2k + 3 = 11 \Rightarrow 2k = 8 \Rightarrow k = 4$, $f(x) = 4x + 3$
- e) $-3k - 1 = 5 \Rightarrow -3k = 6 \Rightarrow k = -2$, $f(x) = -2x - 1$
- f) $6k + 4 = 0 \Rightarrow 6k = -4 \Rightarrow k = -\frac{2}{3}$, $f(x) = -\frac{2}{3}x + 4$
- g) $k = \frac{f(4) - f(1)}{4 - 1} = \frac{9 - 3}{3} = 2$; $2 \cdot 1 + n = 3 \Rightarrow n = 1$, $f(x) = 2x + 1$
- h) $k = \frac{-3 - 7}{3 - (-2)} = \frac{-10}{5} = -2$; $-2 \cdot (-2) + n = 7 \Rightarrow n = 3$, $f(x) = -2x + 3$
- i) $k = \frac{2 - (-1)}{2 - (-4)} = \frac{3}{6} = \frac{1}{2}$; $\frac{1}{2} \cdot 2 + n = 2 \Rightarrow n = 1$, $f(x) = \frac{1}{2}x + 1$

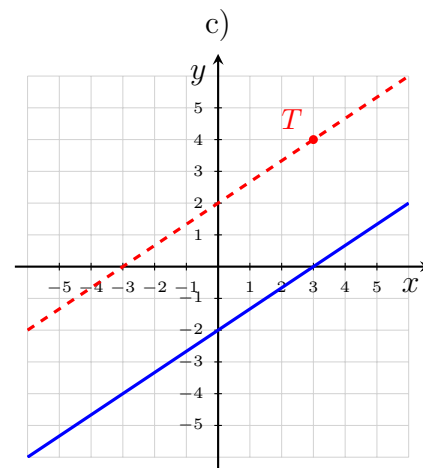
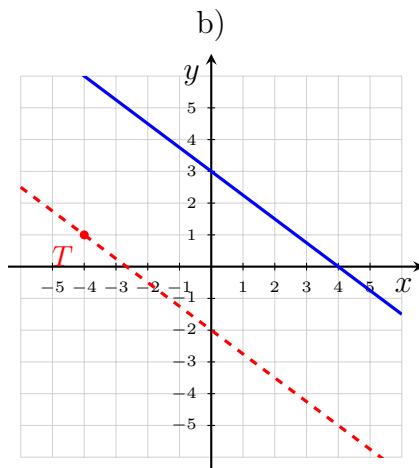
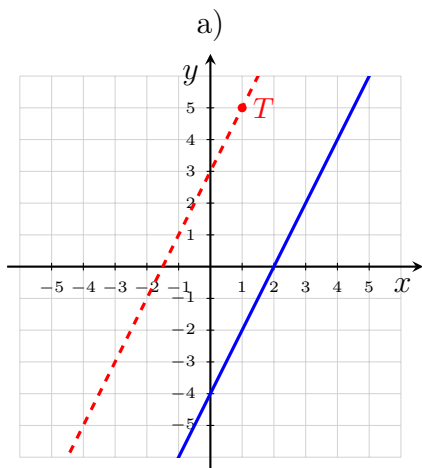
Analiza Naloge 2: – Grafi linearnih funkcij

- a) $f(x) = 2x - 3$: $n = -3$, ničla $x_0 = \frac{3}{2}$; točki $(0, -3)$, $(2, 1)$
- b) $g(x) = -x + 4$: $n = 4$, ničla $x_0 = 4$; točki $(0, 4)$, $(4, 0)$
- c) $h(x) = \frac{1}{2}x + 1$: $n = 1$, ničla $x_0 = -2$; točki $(0, 1)$, $(2, 2)$
- d) $i(x) = -\frac{3}{2}x + 2$: $n = 2$, ničla $x_0 = \frac{4}{3}$; točki $(0, 2)$, $(2, -1)$
- e) $j(x) = -2x$: $n = 0$, ničla $x_0 = 0$; točki $(0, 0)$, $(1, -2)$



Analiza Naloge 3: – Oblike enačbe premice in vzporednica

- a) EksPLICITNA: $y = 2x - 4$ ($k = 2$, $n = -4$); IMPLICITNA: $2x - y - 4 = 0$; SEGMENTNA: $2x - y = 4$ / : 4 $\Rightarrow \frac{x}{2} + \frac{y}{-4} = 1$.
Vzporednica skozi $T(1, 5)$: $k = 2$, $5 = 2 \cdot 1 + n \Rightarrow n = 3$, $y = 2x + 3$ ($2x - y + 3 = 0$).
- b) IMPLICITNA: $y = -\frac{3}{4}x + 3$ / $\cdot 4 \Rightarrow 4y = -3x + 12 \Rightarrow 3x + 4y - 12 = 0$; SEGMENTNA: $3x + 4y = 12$ / : 12 $\Rightarrow \frac{x}{4} + \frac{y}{3} = 1$.
Vzporednica skozi $T(-4, 1)$: $1 = -\frac{3}{4} \cdot (-4) + n = 3 + n \Rightarrow n = -2$, $y = -\frac{3}{4}x - 2$ ($3x + 4y + 8 = 0$).
- c) IMPLICITNA: $\frac{x}{3} + \frac{y}{-2} = 1$ / $\cdot 6 \Rightarrow 2x - 3y = 6 \Rightarrow 2x - 3y - 6 = 0$; EKSPlicitna: $3y = 2x - 6 \Rightarrow y = \frac{2}{3}x - 2$.
Vzporednica skozi $T(3, 4)$: $4 = \frac{2}{3} \cdot 3 + n = 2 + n \Rightarrow n = 2$, $y = \frac{2}{3}x + 2$ ($2x - 3y + 6 = 0$).



dana premica vzporednica (črtkano)

Analiza Naloga 4: – Presek premic

a) $2x - 1 = -x + 5 \Rightarrow 3x = 6 \Rightarrow x = 2, y = 2 \cdot 2 - 1 = 3, \quad P(2, 3)$

b) $3x + 4 = x - 2 \Rightarrow 2x = -6 \Rightarrow x = -3, y = -3 - 2 = -5, \quad P(-3, -5)$

c) Seštejemo enačbi: $3x = 9 \Rightarrow x = 3, y = 7 - 3 = 4, \quad P(3, 4)$

d) Iz q : $x = y - 4$; vstavimo v p : $2(y - 4) + 3y - 12 = 0 \Rightarrow 5y = 20 \Rightarrow y = 4, x = 0, \quad P(0, 4)$

e) Vstavimo y iz p v q : $3x + 2(\frac{1}{2}x + 3) - 14 = 0 \Rightarrow 4x - 8 = 0 \Rightarrow x = 2, y = \frac{1}{2} \cdot 2 + 3 = 4, \quad P(2, 4)$

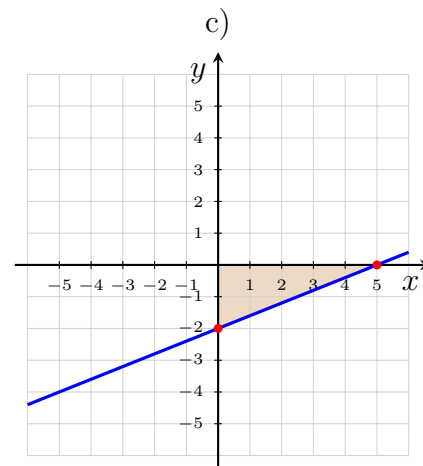
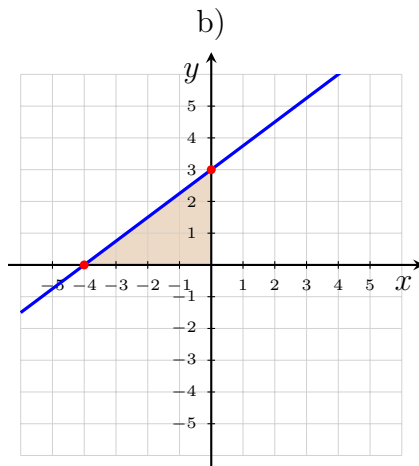
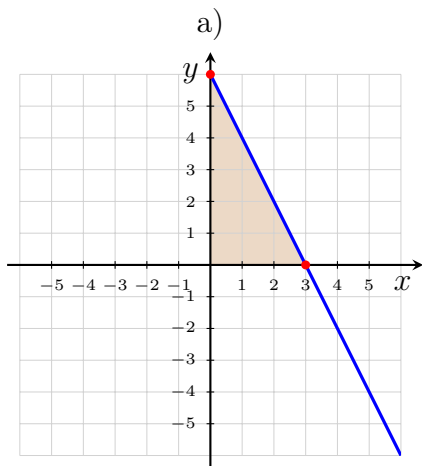
Analiza Naloga 5: – Presečišča z osema in ploščina trikotnika

Presečišče z osjo x dobimo pri $y = 0$, z osjo y pri $x = 0$. Trikotnik je pravokoten, zato je $S = \frac{|m| \cdot |n|}{2}$.

a) $y = 0: -2x + 6 = 0 \Rightarrow x = 3, N(3, 0); \quad x = 0: y = 6, M(0, 6); \quad S = \frac{3 \cdot 6}{2} = 9$

b) $y = 0: 3x + 12 = 0 \Rightarrow x = -4, N(-4, 0); \quad x = 0: -4y + 12 = 0 \Rightarrow y = 3, M(0, 3); \quad S = \frac{4 \cdot 3}{2} = 6$

c) Iz segmentne oblike razberemo: $N(5, 0), M(0, -2); \quad S = \frac{5 \cdot 2}{2} = 5$

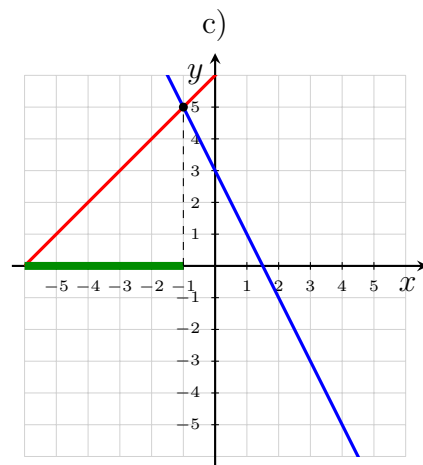
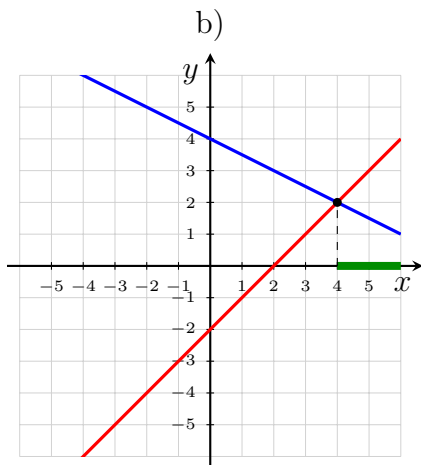
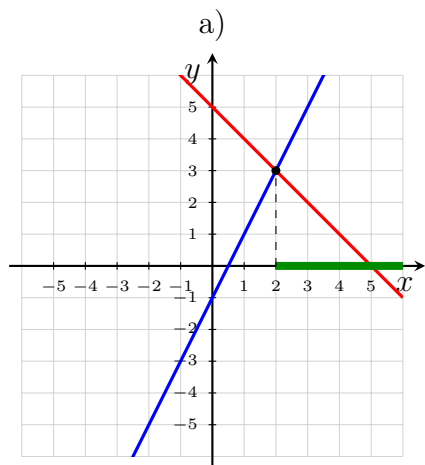


Analiza Naloge 6: – Lega premice nad oz. pod drugo premico

a) $2x - 1 > -x + 5 \Rightarrow 3x > 6 \Rightarrow x > 2, \quad x \in (2, \infty)$

b) $-\frac{1}{2}x + 4 < x - 2 \Rightarrow -\frac{3}{2}x < -6 \Rightarrow x > 4, \quad x \in (4, \infty)$ (deljenje z negativnim številom obrne znak)

c) $p: y = -2x + 3, \quad q: y = x + 6; \quad -2x + 3 > x + 6 \Rightarrow -3x > 3 \Rightarrow x < -1, \quad x \in (-\infty, -1)$



premica p premica q rešitev na osi x