

17.

$$x \in \left(-2, \frac{1}{4}\right)$$

18.

$$x \in \left[-\frac{1}{2}, \frac{4}{3}\right]$$

19.

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

20.

$$-4x^2 - (k+5)x - 4 < 0$$

$$D < 0$$

$$(-(k+5))^2 - 4 \cdot (-4) \cdot (-4) < 0$$

$$k^2 + 10k + 25 - 64 < 0$$

$$k^2 + 10k - 39 < 0$$

$$k = 3$$

$$k = -13$$



$$k \in (-13, 3)$$

21.

$$x \in [0, 2]$$

22.

$$y = x^2 - 4x$$

23.

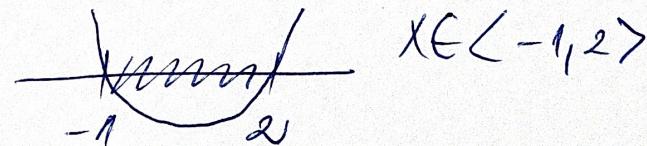
$$f(x) = -\frac{1}{2}x^2 + 3x - 1 \quad \text{Izracunajj tenu.}$$

$\left(-\infty, \frac{7}{2}\right] \rightarrow \text{Rješenje}$

24. c)

$$27. \quad a) \quad (x+1)(x-2) < 0$$

25. a)



$$x \in (-1, 2)$$

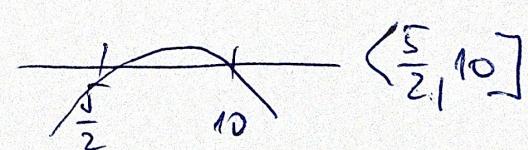
26. b)

$$b) \quad \frac{x+5}{2x-5} - 1 \geq 0$$

$$\frac{-x+10}{2x-5} \geq 0 \quad / \cdot (2x-5)^2$$

$$(-x+10)(2x-5) \geq 0$$

$$\frac{x+5-2x+5}{2x-5} \geq 0$$



$$\left(\frac{5}{2}, 10\right]$$

c)  $x \in (-\infty, \frac{4}{7}] \cup [\frac{3}{4}, +\infty)$

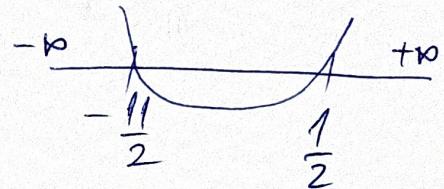
28. a)  $x^2 + (2m+5)x + 9 = 0$

$$D > 0$$

$$(2m+5)^2 - 4 \cdot 1 \cdot 9 > 0$$

$$4m^2 + 20m + 25 - 36 > 0$$

$$4m^2 + 20m - 11 > 0$$



$$m = \frac{1}{2} \quad m = -\frac{11}{2}$$

$$m \in (-\infty, -\frac{11}{2}) \cup (\frac{1}{2}, +\infty)$$

b)  $m \in (-\infty, -1) \cup (\frac{7}{9}, +\infty)$

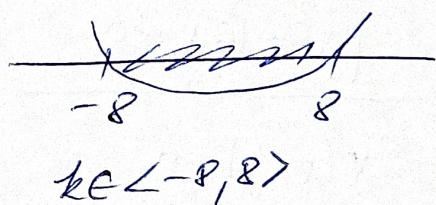
29. a)  $8x^2 + kx + 2 = 0$

$$D < 0$$

$$k^2 - 4 \cdot 8 \cdot 2 < 0$$

$$k^2 - 64 < 0$$

$$(k-8)(k+8) < 0$$

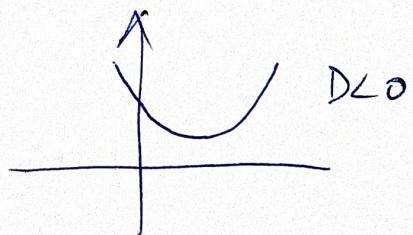


$$k \in (-\infty, -8) \cup (8, +\infty)$$

b)  $k \in (-10-4\sqrt{6}, -10+4\sqrt{6})$

30. a)  $f(x) = x^2 - (m+1)x + 2 \quad c > 0$

$$D < 0$$



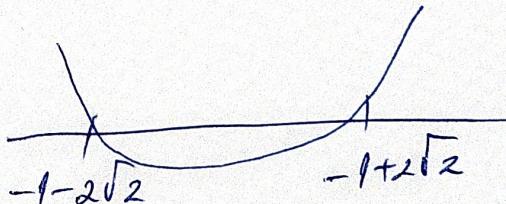
$$(-(m+1))^2 - 4 \cdot 1 \cdot 2 < 0$$

$$m^2 + 2m + 1 - 8 < 0$$

$$m^2 + 2m - 7 < 0$$

$$m = -1 + 2\sqrt{2}$$

$$m = -1 - 2\sqrt{2}$$

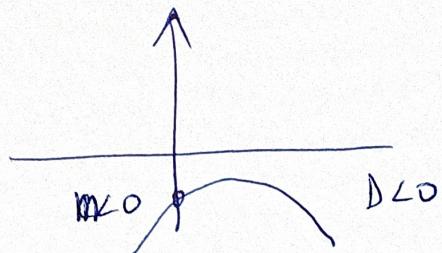


$$m \in (-1-2\sqrt{2}, -1+2\sqrt{2})$$

b)  $m \in (1, 2)$

31.  $f(x) = -3x^2 - (m+1)x + m$

a)



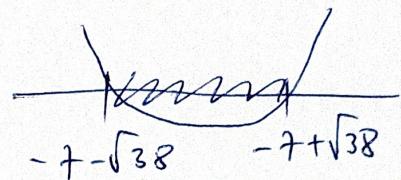
$$(-(m+1))^2 - 4 \cdot (-3) \cdot m < 0$$

$$m^2 + 2m + 1 + 12m < 0$$

$$m^2 + 14m + 1 < 0$$

$$m = -7 + \sqrt{38}$$

$$m = -7 - \sqrt{38}$$



$$\langle -7 - \sqrt{38}, -7 + \sqrt{38} \rangle$$

b)  $f(x) = (m+2)x^2 + 3x + (m-2)$

$$m \in \langle -\infty, -\frac{5}{2} \rangle$$

32.

$$\begin{cases} x^2 + 4x > 0 \\ x^2 + 16x \leq 0 \end{cases}$$



$$x(x+4) = 0$$

$$x = 0, x = -4$$

$$x^2 + 16x = 0$$

$$x(x+16) = 0$$

$$x = 0, x = 16$$