

12, 5

نقطة

$$-2 \leq \frac{3x+2}{4} \leq 2 \rightarrow -10 \leq 3x+2 \leq 10 \rightarrow -12 \leq 3x \leq 8 \rightarrow \boxed{-4 \leq x \leq \frac{8}{3}} \quad (2) \quad 1$$

10

$$x = -2 \rightarrow 3(-2) - 2 = -10 \rightarrow D = [-10, 10] \quad (2) \quad 2$$

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

(2) 3

$$x = -1 \rightarrow 3(-1) + 1 = -2 \rightarrow -1 \leq 2 - 2x \leq 2 \rightarrow -3 \leq -2x \leq 3$$

$$x = 2 \rightarrow \frac{3(2)+1}{2} = 5 \rightarrow -\frac{3}{2} \leq x \leq \frac{3}{2} \rightarrow \boxed{D = \left(-\frac{3}{2}, \frac{3}{2}\right]} \quad (2) \quad 15$$

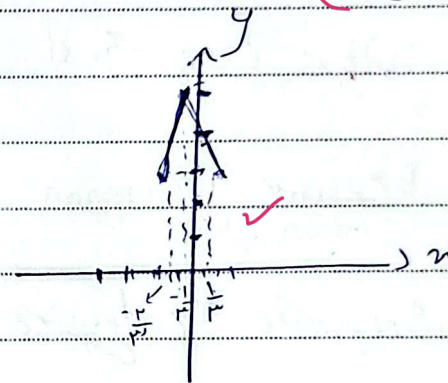
$$|-1| \rightarrow 3x+1 = -1 \rightarrow x = -\frac{2}{3}$$

$$y = 2(0) + 3(2)$$

(2) 20

$$|1| \rightarrow 3x+1 = 1 \rightarrow x = 0$$

$$y = 2(1) + 3 = 5$$



$$|2| \rightarrow 3x+1 = 2 \rightarrow x = \frac{1}{3}$$

$$y = 2(0) + 3(2)$$

25

$$2 - 3x = 1 \rightarrow x = \frac{1}{3}$$

$$y = 0$$

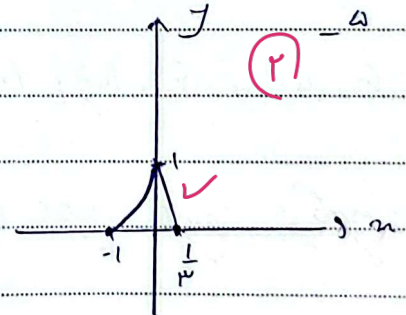
$$2 - 3x = 2 \rightarrow x = 0$$

$$y = 1$$

(2) 30

$$2 - 3x = 2 \rightarrow x = 0$$

$$y = 0$$



Arman

$$\text{ext} \left| \begin{array}{l} -\frac{b}{ra}, -\frac{r}{a}, \frac{r}{w} \\ -\frac{1}{r} \times \frac{r}{ra} + \frac{r}{a} \times \frac{r}{a} + 1 = \frac{r}{ra} + 1 - \frac{r}{rw} \end{array} \right. \quad (2) \quad 4$$

$$y = -\frac{1}{r} \left(x - \frac{1}{a} \right)^r + \frac{r}{a} \left(x - \frac{1}{a} \right) + 1 + \frac{r}{ra}$$

$$-\frac{1}{r} t^r + \frac{r}{a} t + \frac{r}{ra} = 0 \rightarrow t = \frac{r}{a} \pm \sqrt{\frac{r}{ra} + \left(\frac{1}{r} \right) \left(\frac{r}{ra} \right)}$$

$$t = \frac{1}{a} = x - \frac{1}{a} \rightarrow x = \frac{1}{a} + \frac{1}{a} = \frac{2}{a}$$

$$r_n + r_s = 1 \rightarrow \left[\frac{n}{r} \right] \quad y = 1 - r(t) = \left[\frac{r}{a} \right] \quad -\frac{1}{r} x - v = \left[\frac{r}{a} \right] \quad (2) \quad v$$

$$D_{f(n-1)} = [a+1, a] \quad D_{g(n+1)} = [-r, b-1]$$

$$a+1-r_s-r \rightarrow [a-r] \quad a+b-1=a \rightarrow [b-1] \quad a-b, 1-(1) \rightarrow [a-b]$$

$$-r \leq x \leq a \rightarrow -\frac{r}{r} \leq \frac{x}{r} \leq \frac{a}{r} \rightarrow -1 \leq \frac{x}{r} + 1 \leq \frac{v}{r}$$

$$D = \left[-\frac{1}{r}, \frac{v}{r} \right] \quad R = [a, b]$$

$$g(x) = \left| \frac{x-r+1}{rx-r+1} \right| + 1 = \left| \frac{x-1}{rx-r} \right| + 1$$

$$x + \left| \frac{x-1}{rx-r} \right| + 1 \leq \frac{1}{r} \quad (1) \quad \frac{x-1}{rx-r} + x + 1 \leq \frac{1}{r}$$

$$\frac{rx-r}{rx-r} < \frac{1}{r} \quad (2) \quad \frac{x-1}{rx-r} + x + 1 \leq \frac{1}{r}$$

Arman

$$1 \cap 2 \rightarrow [-r, 1] \cup [r, +\infty)$$

$$D_f = (a, f] \rightarrow a < n-1 \leq f \rightarrow a+1 < n \leq \infty \Rightarrow D_{f(n-1)} = (a+1, \infty] \quad -1$$

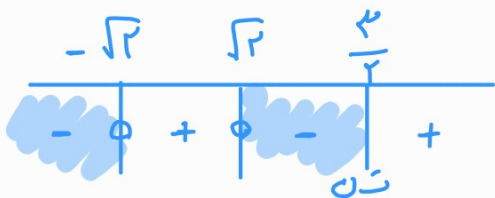
$$D_g = [-1, b) \rightarrow -1 \leq n+1 < b \rightarrow -2 \leq n < b-1 \Rightarrow D_{g(n+1)} = [-2, b-1)$$

$$\left. \begin{array}{l} a+1 = -2 \rightarrow a = -3 \\ b-1 = \infty \rightarrow b = 4 \end{array} \right\} \rightarrow a-b = \boxed{-9}$$

$$g(n) = \left| \frac{(n-2)+1}{2(n-2)+1} \right| + 1 = \left| \frac{n-1}{2n-3} \right| + 1$$

$$n + g(n) < 0 \rightarrow \left| \frac{n-1}{2n-3} \right| < -1-n \rightarrow \text{از یه قدر مطلق بزرگتر شده پس باید مثبت باشد: } -1-n > 0 \rightarrow n < -1$$

$$\frac{n < -1}{\text{قدر مطلق مثبت}} \rightarrow \frac{n-1}{2n-3} < -1-n \rightarrow \frac{2n^2-4}{2n-3} < 0 \rightarrow \frac{2(n-\sqrt{2})(n+\sqrt{2})}{2n-3} < 0$$



$$\xrightarrow{n < -1} n < -\sqrt{2} \rightarrow (-\infty, -\sqrt{2})$$

$$D_{y_1} = [-3, \infty] \rightarrow -3 \leq n \leq \infty \rightarrow -\frac{1}{4} \leq \frac{n}{4} + 1 \leq \frac{5}{4} \Rightarrow D_f = \left[-\frac{1}{4}, \frac{5}{4}\right] \quad -9$$

$$R_{y_1} = [-1, 2] \rightarrow -1 \leq f \leq 2 \rightarrow -\infty \leq 2f-3 \leq 1 \rightarrow 0 \leq |2f-3| \leq \infty$$

$$0 \leq \sqrt{|2f-3|} \leq \sqrt{\infty} \Rightarrow R_f = [0, \sqrt{\infty}]$$