

۱۵/۵

۱. به سبب شروع $\square \checkmark$ که به دوانه $A_{\text{ع}}$

$$-2 \leq \frac{3x+2}{5} \leq 4$$

$$\Rightarrow -10 \leq 3x+2 \leq 20 \quad (2) \quad (1)$$

$$\Rightarrow -12 \leq 3x \leq 18$$

$$\Rightarrow -4 \leq x \leq 6$$

$$D_x\left(\frac{3x+2}{5}\right) = [-4, 6] \quad \checkmark$$

$$3x-2 \begin{cases} -2 \\ -1 \\ 3 \end{cases} \begin{cases} -1 \\ 1 \\ 3 \end{cases}$$

$$\Rightarrow -1 \leq x \leq 1 \quad (2) \quad (2)$$

$$= [-1, 1] \quad \checkmark$$

~~$4x+1 \leq 2$~~

$$\frac{3x+1}{2} \begin{cases} -1 \\ -1 \\ 3 \end{cases} \begin{cases} -1 \\ 1 \\ 3 \end{cases}$$

$$\Rightarrow -1 \leq x \leq 1$$

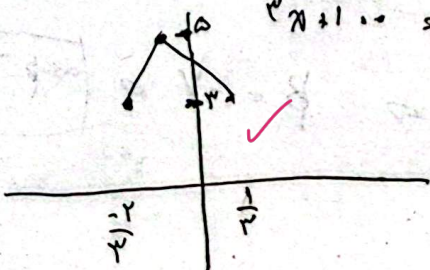
$$\Rightarrow -1 \leq 2-5x \leq 4$$

$$\Rightarrow -3 \leq -5x \leq 3$$

$$\Rightarrow -\frac{3}{5} \leq x \leq \frac{3}{5} \quad \Rightarrow D = \left[-\frac{3}{5}, \frac{3}{5}\right] \quad \checkmark$$

$$-1 \leq 3x+1 \leq 2 \Rightarrow -\frac{2}{3} \leq x \leq \frac{1}{3}$$

$$\Rightarrow -\frac{2}{3} \leq x \leq \frac{1}{3}$$

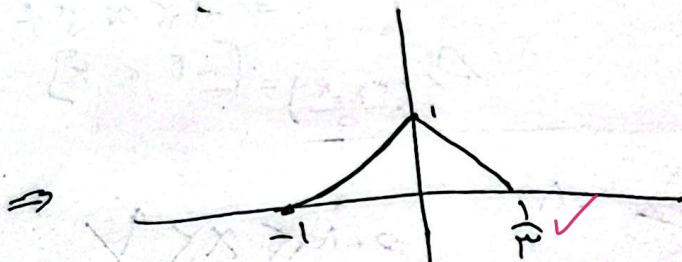


$$1.5 - 2x \leq 0$$

$$2 - 2x = 0 \Rightarrow x = 1$$

(2) (5)

$$-1 \leq x \leq 2 \Rightarrow \frac{1}{2} \geq x \geq -1$$



$$-\frac{1}{2}x^2 + \frac{1}{2}x + 1$$

(4)

$$\frac{-\frac{1}{2}}{-1} = \frac{b}{a} = \frac{1}{2} \Rightarrow \left(\frac{1}{2}x\right) + \frac{1}{2} = 0$$

$$-\frac{1}{2}x^2 + \frac{1}{2}x + 1 = 0$$

$$\sqrt{\frac{14}{1.4}} + \frac{99}{1.4 \times 20}$$

صفت اف

$$2x + 1 = 1 \Rightarrow x = 0$$

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

(2) (7)

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

$$\Rightarrow \beta = -1 \Rightarrow \left[\alpha \beta = \frac{1}{2} \right]$$

$$D_f(x-1) = (a+1, \infty)$$

(2) (5)

$$D_g(x+1) = [-2, b-1)$$

$$\Rightarrow D_g(x+1) \cap D_f(x-1) = (-2, \infty)$$

$$\Rightarrow b-1 = \infty$$

$$\Rightarrow b = \infty$$

$$\Rightarrow a-b = -9$$

$$\Rightarrow a+1 = -2$$

$$\Rightarrow a = -3$$

$$R_f = [-1, \infty)$$

$$2R_f - 3 = [-2, \infty) \mid \Rightarrow \sqrt{[0, \infty)}$$

$$\Rightarrow [0, \infty)$$

$$-3 \leq \frac{x}{2} + 1 \leq 0 \Rightarrow -4 \leq \frac{x}{2} \leq -2$$

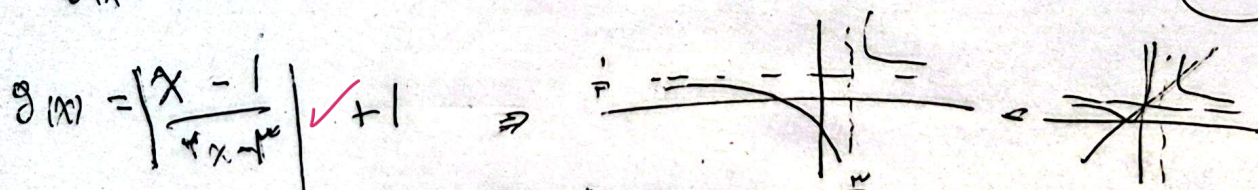
$$\Rightarrow -8 \leq x \leq -4$$

$$D_f = [-1, \infty)$$

$$g(x) = \sqrt{x-2} + 1$$

صغرى افق

(1) (5)



$$\Rightarrow g(x) < -x$$

$$x^2 = 2$$

$$\Rightarrow -1-x = \frac{x-1}{2x-2}$$

$$-(2x-2)(x+1) = x-1$$

$$-2x^2 + 2x + 2 = x-1$$

$$\Rightarrow x = \pm \sqrt{2}$$

صغرى افق

-9

$$رأس: (h, k) \xrightarrow{\text{معادله خط}} y = a(n-h)^2 + k = -\frac{1}{3}n^2 + \frac{2}{3}n + 1 \rightarrow a = -\frac{1}{3}$$

$$رأس: (4, 3) \rightarrow y = -\frac{1}{3}(n-4)^2 + 3 \xrightarrow{y=0} -\frac{1}{3}(n-4)^2 = -3 \rightarrow \begin{cases} n=7 \\ n=1 \end{cases}$$

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

-9

$$R_{y_1} = [-1, 2] \rightarrow -1 \leq f \leq 2 \rightarrow -5 \leq 2f - 3 \leq 1 \rightarrow 0 \leq |2f - 3| \leq 5$$

$$0 \leq \sqrt{|2f - 3|} \leq \sqrt{5} \Rightarrow R_f = [0, \sqrt{5}]$$

-10

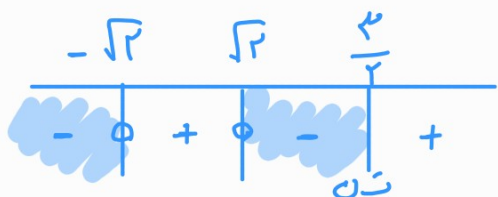
$$g(n) = \left| \frac{(n-2)+1}{2(n-2)+1} \right| + 1 = \left| \frac{n-1}{2n-3} \right| + 1$$

$$n + g(n) < 0 \rightarrow \left| \frac{n-1}{2n-3} \right| < -1-n$$

$$< -1-n$$

از به قدر مطلق بزرگتر شده پس باید مثبت باشد: $-1-n > 0 \rightarrow n < -1$

$$\xrightarrow{n < -1} \frac{n-1}{2n-3} < -1-n \rightarrow \frac{2n^2-4}{2n-3} < 0 \rightarrow \frac{2(n-\sqrt{2})(n+\sqrt{2})}{2n-3} < 0$$



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