

$$\begin{aligned} -2 < x < 4 &\Rightarrow -2 < \frac{3x+2}{5} \leq 4 \\ &\Rightarrow -12 < 3x < 18 \\ &\Rightarrow -4 < x < 6 \\ &\Rightarrow D_2 = [-4, 6] \end{aligned}$$

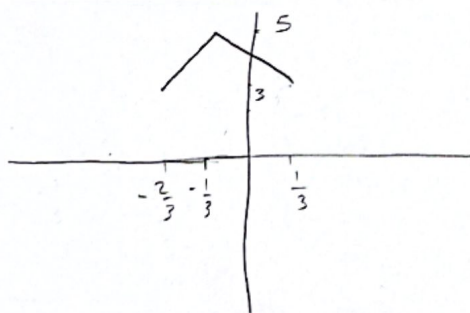
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$$\begin{aligned} -2 < x < 3 &\Rightarrow -8 < 3x-2 < 7 \\ &\Rightarrow D_2 = [-8, 7] \end{aligned}$$

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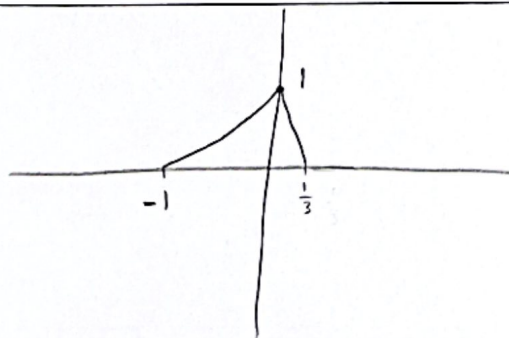
$$\begin{aligned} -1 < x < 3 &\Rightarrow -1 < \frac{3x+1}{2} \leq 5 \\ &\Rightarrow -1 < 2-5x \leq 5 \\ &\Rightarrow 3 > 5x \geq -3 \\ &\Rightarrow 0.6 > x \geq -0.6 \\ &\Rightarrow D_2 = [-0.6, 0.6] \end{aligned}$$

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* دستی کشیدم دقیق تر

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* این هم دستی کشیدم دقیق تر

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$$x_{\min} = -\frac{b}{2a} = \frac{3}{5} \rightarrow y_{\min} = \frac{28}{25}$$

$$A: (4, 3) \Rightarrow y = -\frac{1}{3}(x-4)^2 + 3$$

$$\Rightarrow -\frac{1}{3}(x-4)^2 + 3 = 0 \Rightarrow (x-4)^2 = 9$$

$$\Rightarrow x-4 = \pm 3$$

$$\Rightarrow x < 7$$

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$$(1, 4) \xrightarrow{-2x+12} (-1, 4) \xrightarrow{-\frac{1}{3}x} (-\frac{1}{3}, 4) \xrightarrow{x^2-2xy} (-\frac{1}{3}, -8) \xrightarrow{y \sim 1} (-\frac{1}{3}, -7)$$

$$\Rightarrow A(\alpha, \beta) = (-\frac{1}{3}, -7) \Rightarrow \alpha\beta = -\frac{1}{3} \times -7 = \frac{7}{3}$$

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$$D_{f(n-1)} = (a+1, 5]$$

$$D_{g(n+1)} = [-2, b-1)$$

$$\rightarrow D_{f(n-1)} \cap D_{g(n+1)} = (-2, 5)$$

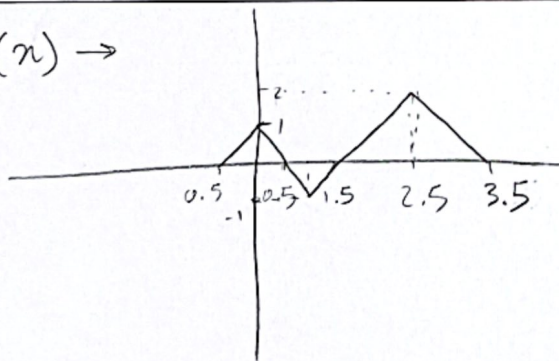
$$\Rightarrow a+1 = -2 \Rightarrow a = -3$$

$$b-1 = 5 \Rightarrow b = 6$$

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

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$$f(x) \rightarrow$$



$$D_{y_2} = [-\frac{1}{2}, \frac{7}{2}]$$

$$\left. \begin{array}{l} y_{2\min} \stackrel{x=\frac{9}{4}}{=} 0 \\ y_{2\max} \stackrel{x=1}{=} \sqrt{5} \end{array} \right\} R_{y_2} = [0, \sqrt{5}]$$

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

$$\Rightarrow x + \left| \frac{x-1}{2x-3} \right| + 1 < 0 \rightarrow x < -1 \Rightarrow \frac{x-1}{2x-3} > 0$$

$$\Rightarrow x + \frac{x-1}{2x-3} + 1 < 0 \Rightarrow (x+1)(2x-3) + (x-1) < 0$$

$$\stackrel{2x-3 < 0}{\Rightarrow} 2x^2 - x - 3 + x - 1 > 0 \Rightarrow x^2 > 2$$

$$\stackrel{\text{بأنه غير ممكن}}{\Rightarrow} (x < -\sqrt{2} \vee x > \sqrt{2}) \cap (x < -1) \Rightarrow D = (-\infty, -\sqrt{2})$$

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