

نام و نام خانوادگی: آریال / سما کمال پاسخنامه تشریحی تکلیف شماره V کلاس دوازدهم B

$$[-2, 4] \xrightarrow{-\frac{2}{5}} \left[-\frac{12}{5}, \frac{14}{5}\right] \xrightarrow{\div \frac{3}{5}} [-4, 6] = D$$

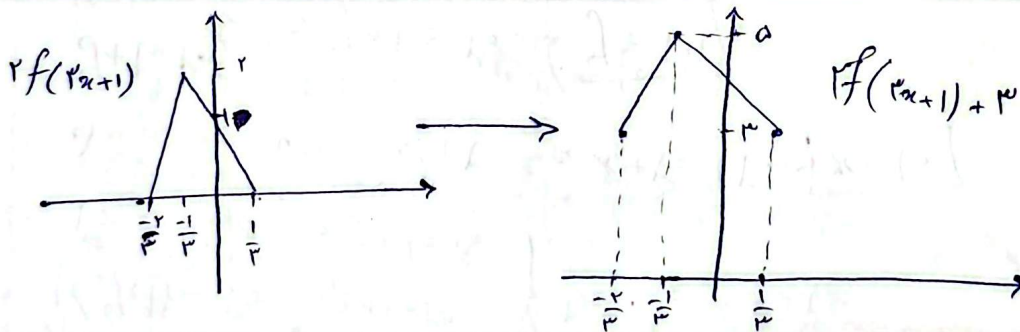
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$$[-2, 3] \xrightarrow[\div 3]{\times 3} [-6, 9] \xrightarrow[\leftarrow + 2]{-2} [-8, 7] = D_{f(x)}$$

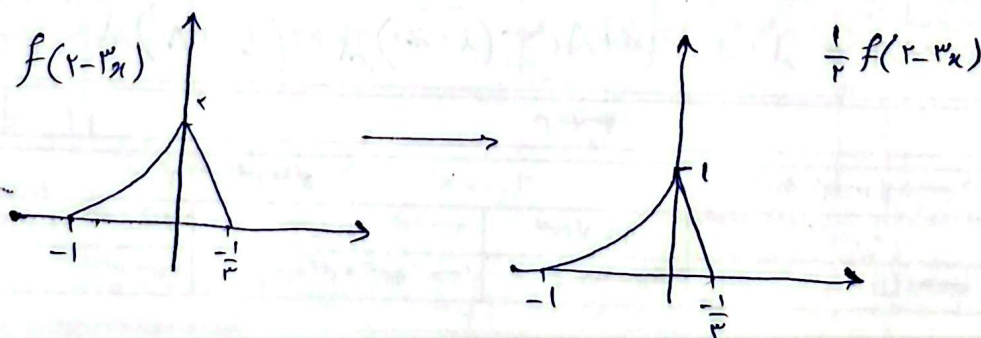
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$$\begin{aligned} [-1, 3] &\xrightarrow{x + \frac{2}{3}} \left[-\frac{1}{3}, \frac{10}{3}\right] \xrightarrow{+\frac{1}{3}} [-1, 4] \\ [-1, 4] &\xrightarrow{-2} [-3, 2] \xrightarrow{x - \frac{1}{2}} \left(-\frac{3}{2}, \frac{3}{2}\right) \end{aligned}$$

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۵

$$\left. \begin{aligned} x &= (x, y) \\ a &= -\frac{1}{x} \end{aligned} \right\} \rightarrow \frac{1}{x} (x-1) + 1 = y \rightarrow \frac{1}{x} x + \frac{1}{x} x + \frac{1}{x} - \frac{1}{x} = 0$$

$$x^2 - 11x + 1 \rightarrow (x-1)(x-1) \rightarrow \{V, 1\} = x$$

6

$$x_1 = 1 \xrightarrow{-1} -1 \xrightarrow{\frac{x-1}{x}} -\frac{1}{x} = x \quad x \beta = \frac{V}{x}$$

$$y_1 = 1 \xrightarrow{\frac{x-1}{x}} -1 \xrightarrow{+1} -\frac{1}{x} = x \quad \beta$$

7

$$D_{f(x+1)} = (a+1, d] \xrightarrow{\text{بسط}} D_{g(x+1)} = [-2, b-1]$$

$$f(x+1) + g(x+1) \rightarrow D = D_{f(x+1)} \cap D_{g(x+1)} = (-2, d)$$

$$\Rightarrow \begin{cases} a+1 = -2 \Rightarrow a = -3 \\ b-1 = d \Rightarrow b = 4 \end{cases} \quad a-b = -3-4 = -7$$

8

$$-1 \leq f(x) \leq 2 \rightarrow -2 \leq 2f-3 \leq 1 \rightarrow 0 \leq |2f-3| \leq 1$$

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

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

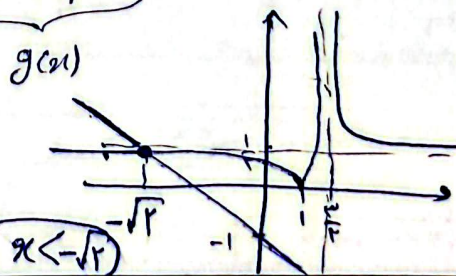
$$D_{y_r} = \left[-\frac{1}{x}, \frac{3}{x}\right]$$

9

$$\left| \frac{(x-1)+1}{x(x-1)+1} \right| = \left| \frac{x-1}{x^2-x-1} \right| \rightarrow \left| \frac{x-1}{x^2-x-1} \right| + 1 + x < 0$$

$$\left| \frac{x-1}{x^2-x-1} \right| < -x-1 \rightarrow x-1 = -x^2+x+1$$

$$x^2-2x=0 \Rightarrow x = \pm \sqrt{2} \xrightarrow{\text{درستی}} -\sqrt{2} \rightarrow x < -\sqrt{2}$$



10