

نام و نام خانوادگی: ... پاسخنامه تشریحی تکلیف شماره ... کلاس: ...

$$f(x) \rightarrow D_{f(x)} = [-1, 4] \quad f\left(\frac{x+1}{5}\right) \xrightarrow{0} -1 \leq \frac{x+1}{5} \leq 4 \rightarrow -1 \leq x+1 \leq 20$$

$$\rightarrow -11 \leq x \leq 19 \rightarrow D_{f\left(\frac{x+1}{5}\right)} = [-11, 19]$$

1

$$f(3x-1) \rightarrow D = [-1, 4] \xrightarrow{-1} f(3(-1)-1) = f(-4) \xrightarrow{4} f(3(4)-1) = f(11)$$

$$\left\{ D_{f(x)} = [-1, 4] \right.$$

2

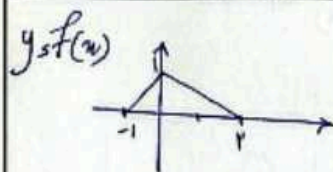
$$f\left(\frac{x+1}{2}\right) \rightarrow D = [-1, 4] \xrightarrow{-1} f\left(\frac{(-1)+1}{2}\right) = f(0) \xrightarrow{4} f\left(\frac{(4)+1}{2}\right) = f(2.5)$$

$$\left\{ D_{f(x)} = [-1, 4] \right.$$

3

$$f(1-2x) \rightarrow D_{f(1-2x)} : -1 \leq 1-2x \leq 4 \rightarrow -2 \leq -2x \leq 3 \rightarrow$$

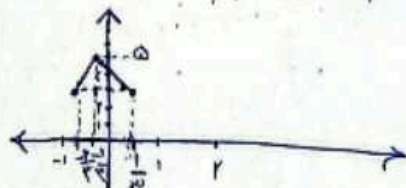
$$\frac{1}{2} \geq x \geq -\frac{3}{2} \Rightarrow D_{f(1-2x)} = \left[-\frac{3}{2}, \frac{1}{2}\right]$$



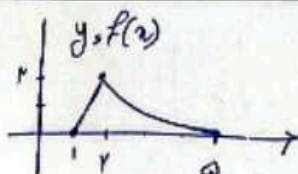
$$y = 2f\left(\frac{x+1}{2}\right) + 3 \quad \text{با توجه به: } -1 \leq \frac{x+1}{2} \leq 4$$

$$\frac{1}{2} \leq x+1 \leq 9 \quad \frac{1}{2} \leq x \leq \frac{7}{2}$$

$$x+1=0 \quad x=-1$$

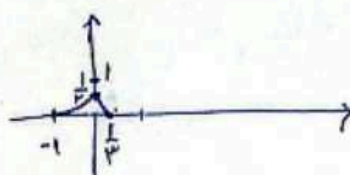


4



$$y = \frac{1}{2}f(1-2x) \quad -1 \leq 1-2x \leq 4 \quad -1 \leq -2x \leq 3 \Rightarrow \frac{1}{2} \geq x \geq -\frac{3}{2}$$

$$\text{موضع نصف می شود} \quad 1-2x=1 \rightarrow x=0$$



5

$$y = \frac{1}{\sqrt{p}}x^p + \sqrt{p}x + 1$$

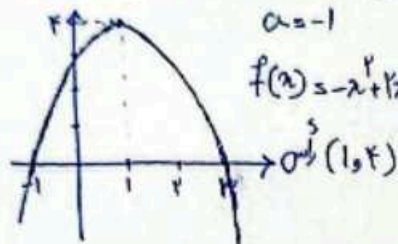
$$\frac{b}{\sqrt{a}} = \frac{\frac{1}{\sqrt{p}}}{\frac{1}{\sqrt{p}}} = \frac{1}{\sqrt{p}}$$

$$y = \frac{1}{\sqrt{p}} \cdot \frac{1}{\sqrt{p}} + \sqrt{p} + 1 = \frac{1}{p} + \sqrt{p} + 1$$

$$f(x) = a(x-1)^p + x \rightarrow f(1) = f(a) + f_b = 0$$

$$a = -1$$

$$f(x) = -x^p + x + 1$$



$$y = 1 - \sqrt{p}f(\sqrt{p}x + 1) \quad \sqrt{p}x + 1 = 1 \rightarrow x = -\frac{1}{\sqrt{p}}$$

$$y = 1 - \sqrt{p}f(-\sqrt{p}) = -\sqrt{p}$$

$$M(\alpha, \beta) = (-\frac{1}{\sqrt{p}}, -\sqrt{p})$$

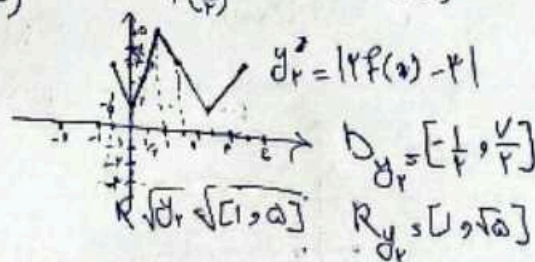
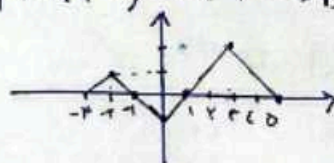
$$\alpha\beta = -\frac{1}{\sqrt{p}} \cdot -\sqrt{p} = \frac{1}{\sqrt{p}}$$

$$y = f(x-1) + g(x+1) \quad D_f = (a, b] \quad D_g = [-1, b)$$

$$\begin{aligned} f(x-1) &\rightarrow a < x-1 \leq b \rightarrow a+1 < x \leq b+1 \\ g(x+1) &\rightarrow -1 \leq x+1 < b \rightarrow -2 \leq x < b-1 \end{aligned} \quad \bigcap \rightarrow (-2, b)$$

$$a-b = -2-b = -4$$

$$y_1 = f(\frac{x+1}{\sqrt{p}}) = f(\frac{x+1}{\sqrt{p}}) \Rightarrow D_{f(\frac{x+1}{\sqrt{p}})} : [-\sqrt{p}, \sqrt{p}] \rightarrow D_{f(x)} : [-1, \sqrt{p}] \rightarrow D_{f(x)} : [-\frac{1}{\sqrt{p}}, \frac{\sqrt{p}}{\sqrt{p}}]$$



$$f(x) = \left| \frac{x+1}{\sqrt{p}} \right| \xrightarrow{\text{substitution}} f = \left| \frac{(x-1)+1}{\sqrt{p}} \right| = \left| \frac{x-1}{\sqrt{p}} \right| \xrightarrow{\text{substitution}} g(x) = \left| \frac{x-1}{\sqrt{p}} \right| + 1$$

$$x + \left| \frac{x-1}{\sqrt{p}} \right| + 1 < 0 \quad \begin{aligned} &\frac{x+1}{\sqrt{p}} + \frac{x-1}{\sqrt{p}} < 0 \\ &\frac{2x}{\sqrt{p}} < 0 \\ &x < 0 \end{aligned} \quad \begin{aligned} &\frac{x+1}{\sqrt{p}} - \frac{x-1}{\sqrt{p}} < 0 \\ &\frac{2}{\sqrt{p}} < 0 \end{aligned}$$