نام و نام خانوادگی: محمدپارسا آخوندی ..... پاسخنامه تشریحی تکلیف شماره ...۷... کلاس ....

۱

$$\text{راس سهمی} = -\frac{b}{2a} = \frac{3}{5} \rightarrow 4 - \frac{3}{5} = \frac{17}{5}$$

$$x = \frac{3}{5} \rightarrow y = \frac{28}{25} \rightarrow 3 - \frac{28}{25} = \frac{47}{25}$$

$$g(x) = f\left(x - \frac{17}{5}\right) + \frac{47}{25}$$

$$g(x) = -\frac{1}{3}\left(x - \frac{17}{5}\right)^2 + \frac{2}{5}\left(x - \frac{17}{5}\right) + 1 + \frac{47}{25} \rightarrow -\frac{1}{3}x^2 + \frac{8}{3}x - \frac{7}{3}$$

$$y = 0 \rightarrow g(x) = 0 \rightarrow \boxed{x = 1 \, , \, x = 7}$$

۲

$$\text{راس } f(x) = (1, 4)$$

$$3x + 2 = 1 \rightarrow x = -\frac{1}{3} \rightarrow y = 1 - 2f(1) = 1 - 8 = -7$$

$$\alpha = -\frac{1}{3}, \quad \beta = -7 \quad \boxed{\alpha\beta = \frac{7}{3}}$$

۳

$$3 - \sqrt{2x} \rightarrow 3 - \sqrt{2(x+1)} \rightarrow -3 + \sqrt{2(x+1)} + 5$$

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

$$g(x) = f(x) \rightarrow 2 + \sqrt{2(x+1)} = \frac{7}{2} \rightarrow \sqrt{2(x+1)} = \frac{3}{2}.$$

$$2x + 2 = \frac{9}{4} \rightarrow 2x = \frac{1}{4} \rightarrow \boxed{x = \frac{1}{8}}$$

۴

$$x - 1 \in (a, 4] \rightarrow x \in (a+1, 5]$$

$$x + 1 \in [-1, b) \rightarrow x \in [-2, b-1)$$

$$\underbrace{(a+1, 5] \cap [-2, b-1) = (-2, 5)}$$

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

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

$$a - b = -3 - 6 = \boxed{-9}$$

۵

$$D_f = -3 \leq \frac{x}{2} + 1 \leq 5 \rightarrow -8 \leq x \leq 8 \rightarrow D = [-8, 8]$$

$$R_f = \begin{cases} f_{max} = 2 \\ f_{min} = -1 \end{cases} \quad y = 2f - 3 \rightarrow \begin{cases} 2(2) - 3 = 1 \\ 2(-1) - 3 = -5 \end{cases} \xrightarrow{\text{قدر مطلق}} [0, 5] \xrightarrow{\text{رادیکال}} [0, \sqrt{5}]$$

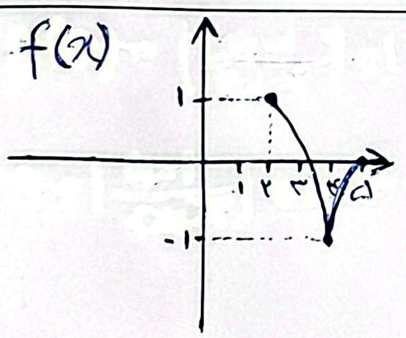
۶

$$f(x)=\log_2 x \longrightarrow \log_2 (x+2) \longrightarrow -\log_2 (x+2) \longrightarrow -\log_2 (x+2)+3$$

$$\longrightarrow g(x)=-\log_2 (2-x)+3 \qquad g(-14)+g(-62)=-3+-1=\boxed{-4}$$ ۷

$$g(-14)=-\log_2 16+3=-4+3=-1 \;/\; g(-62)=-\log_2 64+3=-6+3=-3$$

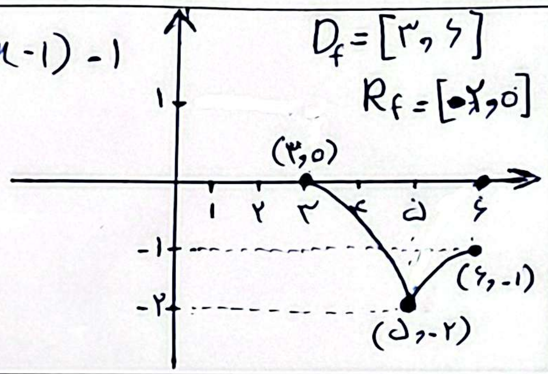
$f(x)$



$f(x-1)-1$

$D_f=[3,6]$

$R_f=[-2,0]$



۸

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

$$\underbrace{\left|\frac{x-1}{2x-3}\right|}_{+}<-x-1 \longrightarrow -x-1>0 \longrightarrow -x>1 \longrightarrow \boxed{x<-1}$$ ۹

۱۰