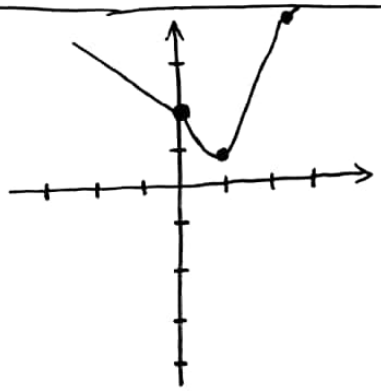
$$y = \frac{x^2 + 5x + m}{x + 1}$$

-۶

-۷

$$f(x) = \begin{cases} x + 2 & ; x \geq 2 \\ x^2 - 2x + 2 & ; 0 \leq x < 2 \Rightarrow \frac{-b}{2a} = 1 \\ |x| + 2 & ; x < 0 \end{cases}$$



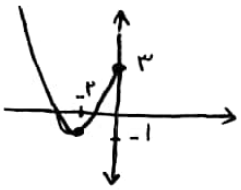
$$\Rightarrow R_f = [1, +\infty)$$

-۸

$$f(x) = \begin{cases} x^2 + 4x + 3 & x \leq 0 \longrightarrow (x+3)(x+1) = 0 \\ [2x] - 2x & x > 0 \longrightarrow R_f = (-1, 0] \quad I \end{cases}$$

$-3 \quad -1$

$$I \cup II = [-1, +\infty)$$



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

II

-۹

$$y = a + 1 - \sqrt{2x + 3} \quad \Rightarrow D_f = [b, +\infty)$$

$$2x + 3 \geq 0 \Rightarrow 2x \geq -3 \Rightarrow x \geq \frac{-3}{2} \Rightarrow b = -\frac{3}{2}$$

$$a + 1 - \sqrt{2 \times \frac{-3}{2} + 3} = 5 \Rightarrow a + 1 = 5 \Rightarrow a = 4$$

$$\Rightarrow ab = \frac{-3}{2} \times 4 = -6$$

-۱۰

$$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x} \Rightarrow D_f = [-1, 1], \; R_f = [2\sqrt{2}, 6]$$

$$f(x) + g(x) = 4\sqrt{4 + 2\sqrt{1-x^2}} \Rightarrow g(x) = 4\sqrt{4 + 2\sqrt{1-x^2}} - 2\sqrt{x+1} - 4\sqrt{1-x} \Rightarrow D_f = [-1, 1]$$

$$\Rightarrow R_f = [-\sqrt{2}, \sqrt{2}]$$

$$y = \frac{f(x)}{6} - \frac{g(x)}{3} = -\sqrt{2 + 2\sqrt{1-x^2}} - \frac{\sqrt{x+1} + 2\sqrt{1-x}}{3} \Rightarrow D_f = [-1, 1]$$

$$\Rightarrow R = [-3, -\frac{4\sqrt{2}}{3}]$$

نام و نام خانوادگی: پارسا ایرانی پاسخنامه تشریحی تکلیف شماره ۸ ـ کلاس یازدهم پسر B

۱-

$f(x)=\sqrt{1-x^2}$ $g=\{(-1,1)(0,\varepsilon)(2,0)(1,2)\}$

$2g-3f=\{(-1,2),(0,0),(1,\varepsilon)\} \longrightarrow R=\{2,0,\varepsilon\}$

$x=-1 \Rightarrow g(-1)=1 \;,\; f(-1)=0$

$x=0 \Rightarrow g(0)=\varepsilon \;,\; f(0)=1$

$x=1 \Rightarrow g(1)=2 \;,\; f(1)=0$

۲-

$f(x)=2x-1 \Rightarrow D_f=[3,+\infty) \Rightarrow R_f=[0,+\infty)$

$g(x)=\frac{1}{3}x+3 \Rightarrow D_g=(-\infty,3] \Rightarrow R_g=(-\infty,\varepsilon]$

$R_f \cup R_g=(-\infty,\varepsilon]\cup[0,+\infty)=\mathbb{R}-(\varepsilon,0)$

۳-

$y=\frac{-x^2}{2}+x+3 \qquad \frac{-x^2}{2}+x+3>\frac{3}{2} \Rightarrow -x^2+2x+6>3 \Rightarrow -x^2+2x+3>0$

$\Delta=\varepsilon+12=16$

ریشه‌ها $=\frac{-2\pm\varepsilon}{-2}=3,-1 \Rightarrow$

	-1		3	
	$-$	$+$		$-$

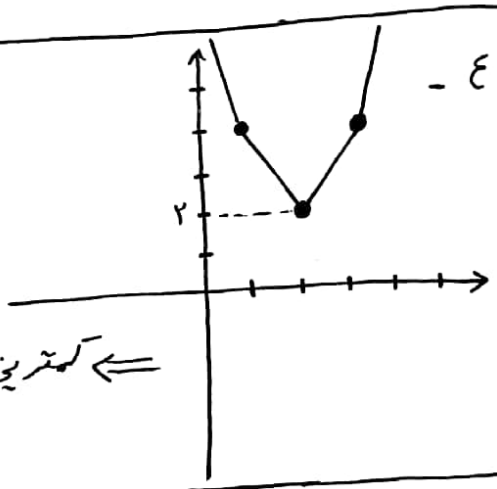
$\Rightarrow (a,b)=(-1,3)$

$\Rightarrow a=-1 \;,\; b=3$

جواب: $\sqrt{b-a}=\sqrt{3-(-1)}=\sqrt{\varepsilon}=2$

۴-

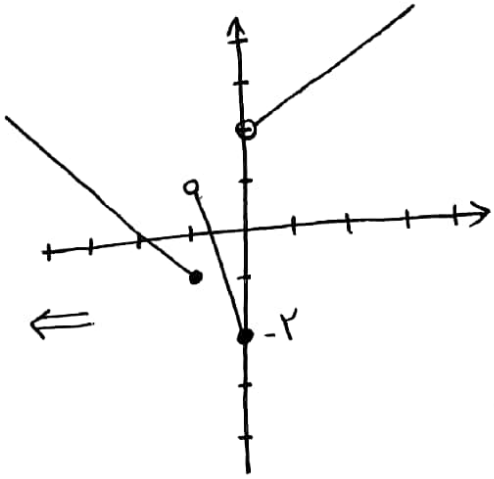
$y=|x-1|+|x-2|+|2x-\varepsilon| \Rightarrow \begin{cases} \varepsilon x-8 & x\geq 3 \\ 2x-2 & 2\leq x<3 \\ 6-2x & 1\leq x<2 \\ 8-\varepsilon x & x<1 \end{cases}$



$\Leftarrow$ کمترین مقدار عبارت عدد ۲ است

۵-

$y=|x|-2|x+1| \Rightarrow \begin{cases} -x-2 & x\geq -1 \\ -3x-2 & 0\leq x<-1 \\ 2+x & x<0 \end{cases}$



$R_f=[-2,+\infty) \Leftarrow$