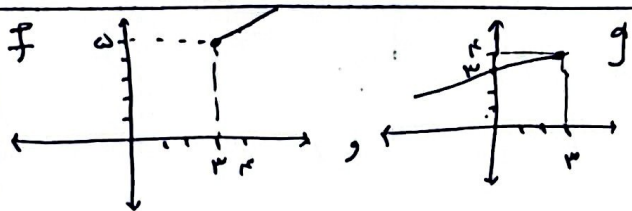


نام و نام خانوادگی: زهرا سادات حسینی ۲۰ یا گفته شد یعنی تالیف شده است. آلاس. بایزدهم دفتر B

$$f(x) \rightarrow -x^2 + 1 \rightarrow x^2 \leq 1 \rightarrow -1 \leq x \leq 1 \rightarrow D_f \Rightarrow D_f \cap D_g = \{-1, 0, 1\}$$

$$2g - 3f = \{(-1, 2), (0, 1-\sqrt{3}), (1, 2)\} \rightarrow R = \{2, 2-\sqrt{3}, 2\} \rightarrow 2+2+2=6$$

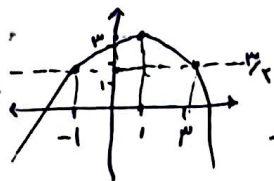


$$\Rightarrow \begin{cases} R_f = [5, +\infty) \\ R_g = (-\infty, 4] \end{cases} \xrightarrow{\cup} \mathbb{R} - (4, 5)$$

$$y = -\frac{x^2}{r} + x + 3$$

$$-\frac{b}{2a} = 1 \rightarrow y_s = -\frac{1}{r} + 1 + 3 = \frac{4}{r}$$

$$\Rightarrow \sqrt{b-a} = \sqrt{3+1} = 2$$



$$\rightarrow x=3 \rightarrow y=\frac{4}{3} \Rightarrow (a, b) = (-1, 3)$$

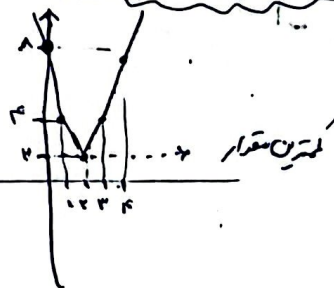
$$y = |x-1| + |x-3| + |2x-4| \quad \left\{ \begin{array}{l} \text{کمترین مقدار برای } y = 2 \end{array} \right.$$

$$x=1 \rightarrow 2+2=4$$

$$x=3 \rightarrow 2+2=4$$

$$x=2 \rightarrow 1+1=2$$

$$x=0 \rightarrow 1+3+4=8$$



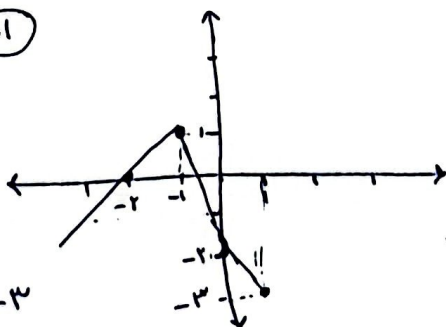
$$y = |x-2| + |x+1|$$

$$x=0 \rightarrow -2=y$$

$$x=-1 \rightarrow y=1$$

$$x=-2 \rightarrow y=2-2=0$$

$$x=1 \rightarrow y=1-2=-1$$



$$\rightarrow R = (-\infty, 1]$$

$$\frac{-x+2}{x+2} \quad \frac{-x-2}{-x-2} \quad \frac{x-2}{-x-2}$$

$$y = \frac{n^2 + \alpha n + m}{n+1} \rightarrow y n + y = n^2 + \alpha n + m \rightarrow n^2 + (\alpha - y)n + m - y \rightarrow 0$$

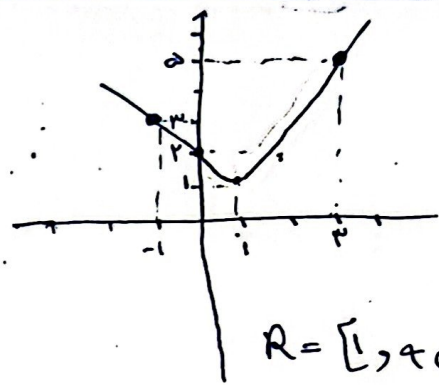
$$(\alpha - y)^2 - 4(m - y) \geq 0 \rightarrow y^2 - 2\alpha y + \alpha^2 - 4m + 4y \geq 0 \rightarrow y^2 - 2\alpha y + \alpha^2 - 4m \geq 0$$

$$\rightarrow \Delta \geq 0 \rightarrow 4\alpha^2 - 4(\alpha^2 - 4m) \geq 0 \rightarrow 4\alpha^2 - 4\alpha^2 + 16m \geq 0 \rightarrow 16m \geq 0 \rightarrow m \geq 0$$

$$\rightarrow \frac{n^2 + \alpha n + m}{n+1} = \frac{(n+1)(n+\alpha)}{n+1} = n+\alpha \rightarrow 18 - \{m\} \rightarrow m \neq 18 \Rightarrow m = 1, 2, 3 \rightarrow \text{مقادیر صحیح}$$

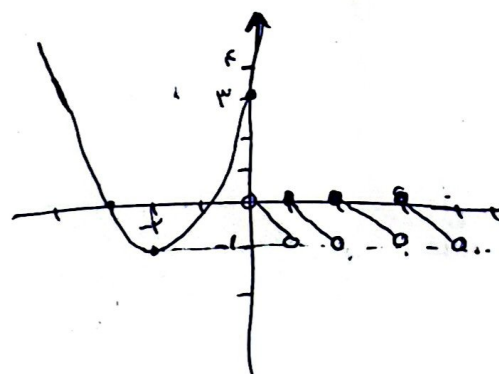
$$f(n) \begin{cases} n+2; n \geq 2 \\ n^2 - 2n + 2; 0 \leq m < 2 \\ |n| + 2; n < 0 \end{cases}$$

$$\begin{aligned} n=2 &\rightarrow \alpha=y \\ n=0 &\rightarrow y=2 \\ \alpha=-1 &\rightarrow y=3 \\ n=1 &\rightarrow y=1 \end{aligned}$$



$$f(m) \begin{cases} n^2 + 2n + 2; n \leq 0 \\ [m] - 2n; n > 0 \end{cases} \rightarrow \begin{cases} -\frac{b}{2a} = -\frac{-2}{2} = 1 \\ \Delta - 4ac = -4 \end{cases}$$

$$\rightarrow R = [1, +\infty)$$



$$2n + 3 \geq 0 \rightarrow 2n \geq -3 \rightarrow n \geq -\frac{3}{2} \rightarrow \left[-\frac{3}{2}, +\infty\right) \rightarrow b = -\frac{3}{2}$$

$$n = -\frac{3}{2} \rightarrow a+1 = \alpha \rightarrow \alpha = \frac{1}{2}$$

$$ab = -\frac{3}{2} \times \frac{1}{2} = -\frac{3}{4}$$

$$g(n) = 2\sqrt{2+2\sqrt{1-n^2}} - 2\sqrt{n+1} - 2\sqrt{1-n} \xrightarrow{\frac{f(n)-g(n)}{4}} 2\sqrt{n+1} + 2\sqrt{1-n} - 4\sqrt{2+2\sqrt{1-n^2}}$$

$$+ 2\sqrt{n+1} + 2\sqrt{1-n} = -\sqrt{2+2\sqrt{1-n^2}} + 2\sqrt{1-n} + \sqrt{n+1} = \sqrt{(\sqrt{n+1} + \sqrt{1-n})^2} + \sqrt{n+1}$$

$$+ 2\sqrt{1-n} = -\sqrt{n+1} + \sqrt{n+1} + \sqrt{n+1} + 2\sqrt{1-n} = \sqrt{1-n} \rightarrow R = [0, 4\sqrt{2}]$$

$$D_f \cap D_g = [-1, 1]$$