

سوال ① =>

$$Dg_n f = \{-1, 0, 1\}$$

مجموع اعضاء بر = $2 + 3 + 6 = 11$

سوال (۶) =>

$$\Rightarrow R_f \cup R_g: \underline{\underline{(-\infty, 5] \cup [5, +\infty)}}$$

سوال (۳) =>

$$\sqrt{b-a} = \sqrt{4-(-1)} = \sqrt{5} = \boxed{4}$$

سوال (۴) = <

سوال (۵) =>

$$R_f = (-0.91)$$

سوال (4) = <

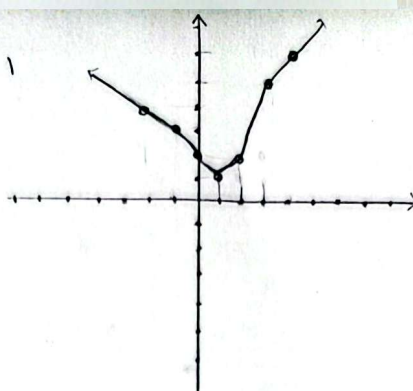
$$\Delta = (\omega - y)^2 - \varepsilon(m - y) = y^2 - 2\omega y + \omega^2 - \varepsilon m + \varepsilon y = y^2 - 2y\omega + \omega^2 - \varepsilon m \quad n = \frac{y - \omega \pm \sqrt{4y\omega - 2y + \omega^2 - \varepsilon m}}{2} \rightarrow$$

آورد جای m ، $\frac{x}{x}$ جباریم $= n + 4 = \frac{(n+1)(n+4)}{n+1} = \frac{n^2 + 5n + 4}{n+1}$ داند در این حالت $\{1\} - R$ است! در این صورت برد تمام اعداد حقیقی درست می آید:

۴. برای $m \leq 4$ $\rightarrow \{1, 2, 3\}$ دایمی

سوال ٧ <=

$$f(x) = \begin{cases} x+2 & ; x > 3 \\ x^2-2x+2 & ; 0 \leq x \leq 3 \rightarrow \frac{-b}{2a} = \frac{1}{1} = 1, y = 1 \\ |x|+2 & ; x < 0 \end{cases}$$

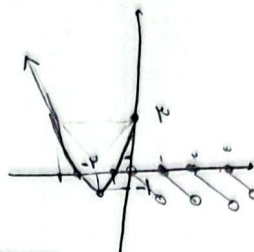


$$R_f = [1, +\infty)$$

سوال ٨ <=

$$f(x) = \begin{cases} x^2 + 2x + 2 & ; x \leq 0 \\ [x] - 2x & ; x > 0 \rightarrow [x] = x \rightarrow R: (-1, 0) \end{cases}$$

$$x^2 + 2x + 2 \rightarrow \frac{-b}{2a} = \frac{-2}{2} = -1, y = -1 \quad \min | -1$$



$$R_f = (-1, 0) \cup [-1, +\infty) \Rightarrow [-1, +\infty)$$

سوال ٩ <=

$$y = a + 1 - \sqrt{x+2} \quad D_f = [b, +\infty) \quad R_f = (-\infty, c] \quad a, b, c = ?$$

$$\rightarrow x+2 \geq 0 \rightarrow x \geq -2 \Rightarrow b = -2$$

$$\text{بیشترین مقدار } y \text{ زمانی که } x = -2 \rightarrow a + 1 - \sqrt{-2+2} = c \Rightarrow a + 1 = c \Rightarrow a = c - 1$$

$$a, b = c - 1, -2 = -9$$

سوال ١٠ <=

$$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x} \quad , \quad g(x) = 2\sqrt{x+2} + 4\sqrt{1-x} \quad , \quad D_f = D_g \quad , \quad y = \frac{f(x)}{g(x)} - \frac{g(x)}{f(x)}$$

$$\begin{cases} x+1 \geq 0 \rightarrow x \geq -1 \\ 1-x \geq 0 \rightarrow x \leq 1 \end{cases} \Rightarrow x \in [-1, 1]$$

$$f(1) = 2\sqrt{2}, \quad f(-1) = 4\sqrt{2}, \quad g(1) = 4$$

$$\rightarrow f(1) + g(1) = 2\sqrt{2} + 4\sqrt{2} = 6\sqrt{2} \quad , \quad g(1) = 4\sqrt{2} - 2\sqrt{2} = 2\sqrt{2}$$

$$\rightarrow f(-1) + g(-1) = 4\sqrt{2} + 4\sqrt{2} = 8\sqrt{2} \quad , \quad g(-1) = 4\sqrt{2} - 4\sqrt{2} = 0$$

$$y(1) = \frac{2\sqrt{2}}{4} - \frac{4\sqrt{2}}{2\sqrt{2}} = -\frac{1}{2} \quad , \quad y(-1) = \frac{4\sqrt{2}}{4} - \frac{0}{4\sqrt{2}} = 1$$

$$\Rightarrow R_f = [-\frac{1}{2}, 1]$$