

بجانب / Δ ≤ 0

بجانب

$$f(x) = \sqrt{1-x^2} \quad \frac{-1}{-1+1} = 0 \quad D_f = [-1, 1] \quad f = \{(-1, 0), (0, 1), (1, 0)\} \quad (1)$$

$$g = \{(-1, 1), (0, 2), (1, 0), (1, 2)\} \quad f = \{(-1, 0), (1, 0), (0, 2)\}$$

$$fg = \{(-1, 2), (0, 1), (1, 2)\}$$

$$fg - f = \{(-1, 2), (0, 1), (1, 2)\} \rightarrow 2 + 0 + 1 = 11$$

$$f(x) = x-1 \quad D_f = [x, +\infty) \rightarrow R_f = [x, +\infty)$$

(2)

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

$$R_f \cup R_g = (-\infty, x] \cup [x, +\infty)$$

$$g = \frac{-x^2}{x} + x + 3 \quad \frac{-x^2}{x} + x + 3 > \frac{x}{x}$$

$$\frac{-x^2}{x} + x + \frac{x}{x} > 0$$

$$-x^2 + x + x > 0$$

$$-(x+1)(x-2) > 0$$

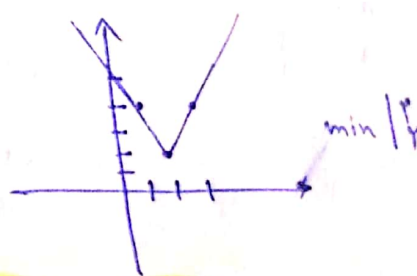
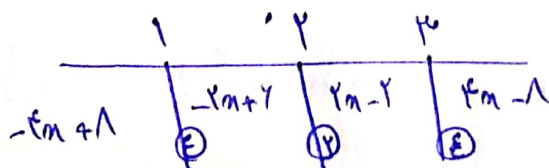
$$\frac{-1}{-1} + \frac{3}{1} = 2$$

$$\sqrt{b-a} = \sqrt{2} = 2$$

(3)

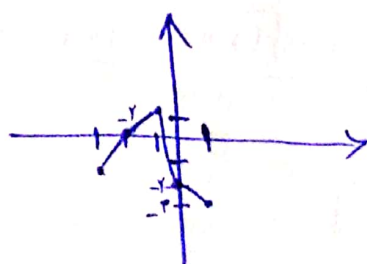
$$y = |x-1| + |x-2| + |2x-5|$$

(4)



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

(5)



$$\rightarrow \begin{cases} x > 2 & x-2 = x-2 \rightarrow -x-2 \\ -1 \leq x \leq 2 & -x-2 = -x-2 \rightarrow -x-2 \\ x < -1 & -x+2 = -x+2 \rightarrow x+2 \end{cases}$$

$$R_f = (-\infty, 1]$$

$$y = \frac{a^r + d n + m}{n+1} \rightarrow y n + y s n^r + a n + m \quad (6)$$

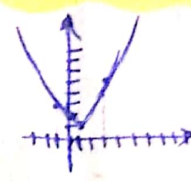
$$n^r + (d-y)n + (m-y)s = 0, a > 0, \Delta > 0$$

$$\frac{y - d \pm \sqrt{(d-y)^2 - 4(m-y)s}}{2} \rightsquigarrow y^r + r d - l \cdot y + \varepsilon y - \varepsilon m \geq 0$$

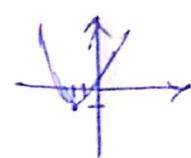
$$y^r - y + r d - \varepsilon m \geq 0 \quad m = \{1, 2, 3\}$$

$$a > 0, \Delta < 0$$

$$\Delta = r^2 y - l \cdot 0 + 1 \cdot y m < 0 \rightarrow m < \varepsilon$$

$$f(n) = \begin{cases} n+r & n \geq r \\ n^r - r n + r & 0 \leq n < r \\ |n|+r & n < 0 \end{cases} \rightarrow \begin{cases} \frac{1}{r} \\ \frac{1}{r} \end{cases}$$


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

$$f(n) = \begin{cases} n^r + \varepsilon n + r & n \leq 0 \\ [r n] - r n & n > 0 \end{cases} \rightarrow \begin{cases} \frac{-b}{2a} = -\frac{r}{1} \rightarrow R_f \subseteq [-1, +\infty) \\ R_{f'} = [-1, 0] \end{cases} \quad (8)$$


$$R_f \cup R_{f'} = [-1, 0] \cup [-1, +\infty) = [-1, +\infty)$$

$$y = a + 1 - \sqrt{r n + r} \quad (9)$$

$$D_f \rightarrow r n + r \geq 0 \rightarrow n \geq -\frac{r}{r}$$

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

$$y_{\min} = d$$

$$b = -\frac{r}{r}$$

$$d = a + 1 - 0 \rightarrow a = \varepsilon$$

$$a b \leq \left(-\frac{r}{r}\right) \times \varepsilon = -\varepsilon$$

$$f(n) + g(n) = r \sqrt{r n + r} \sqrt{1-n} = r \sqrt{(1-n^2 + \sqrt{n+1})^2} \quad f(n) = r \sqrt{n+1} + \varepsilon \sqrt{1-n} \quad (10)$$

$$D_f = D_g = [1, 1]$$

$$g(n) = r \sqrt{1-n} + r \sqrt{1+n} - r \sqrt{1+n} - \varepsilon \sqrt{1-n} = \sqrt{1+n} - \sqrt{1-n}$$

$$y = \frac{f(n)}{r} - \frac{g(n)}{r} = \frac{\sqrt{n+1} + r \sqrt{1-n} + \sqrt{1+n} + \sqrt{1+n}}{r} = \frac{r \sqrt{n+1}}{r}$$

$$\frac{r \sqrt{-n+1}}{r} \rightarrow n = -1 \sim \sqrt{r}$$

$$\rightarrow n = 1 \sim \sqrt{r}$$

$$R_f = [0, \sqrt{r}]$$