

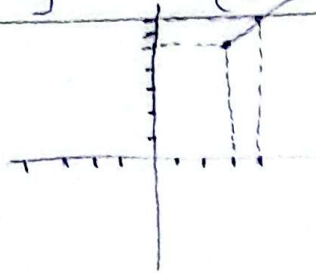
$$f_g = \{(-1, 2), (0, 8), (1, 0), (2, 4)\}$$

$$D_f \Rightarrow 1 - n^2 \geq 0 \quad 1 \geq n^2 \quad -1 \leq n \leq 1$$

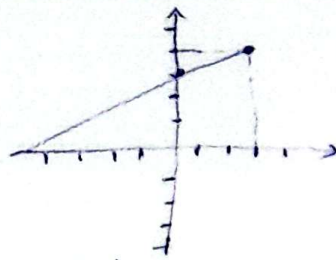
$$f = \{(-1, 0), (0, 1), (1, 0)\}$$

$$f_g = \{(-1, 0), (0, 3), (1, 0)\}$$

$$f_g - f = \{(-1, 2), (0, 5), (1, 4)\} \quad \text{مجموع } \epsilon = 2 + 0 + 4 = 11$$



$$R_f = [0, +\infty)$$



$$R_g = (-\infty, 4]$$

$$R_f \cup R_g = (-\infty, 4] \cup [0, +\infty)$$

$$-\frac{n^2}{2} + n + 2 > \frac{3}{2} \Rightarrow -\frac{n^2}{2} + n > -\frac{1}{2} \Rightarrow \frac{n^2}{2} - n - \frac{1}{2} < 0$$

$$\xrightarrow{\times 2} n^2 - 2n - 1 < 0 \Rightarrow (n+1)(n-3) < 0 \quad \begin{array}{c|cc} n & -1 & 3 \\ \hline & + & - & + \end{array}$$

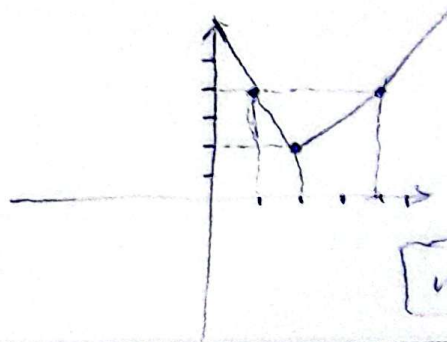
$$\Rightarrow (-1, 3)$$

$$\sqrt{b-a} = \sqrt{3-(-1)} = \sqrt{4} = 2$$

$$\text{برای } x=1 \rightarrow y=2$$

$$2 \rightarrow n=3 \rightarrow y=4$$

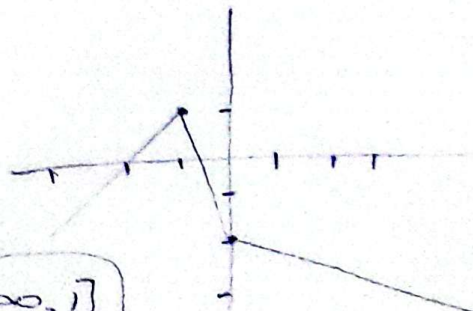
$$3 \rightarrow n=2 \rightarrow y=2$$



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

$$\begin{array}{c|cc} -1 & 0 & \\ \hline -n+2n+2 & | -n-2n-1 | & n-2n-2 \\ \downarrow & \downarrow & \downarrow \\ n+2 & -3n-1 & -n-2 \end{array}$$

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

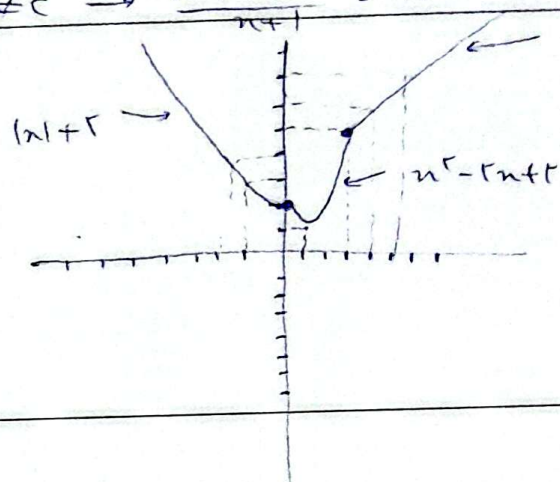


$$y = \frac{n^r + \delta n + m}{n+1} \Rightarrow y n + y = n^r + \delta n + m \Rightarrow n^r + (\delta - y)n + (m - y) = 0$$

$$\Rightarrow b^2 - 4ac \geq 0 \Rightarrow (\delta - y)^2 - 4(m - y) \geq 0 \Rightarrow \delta^2 + y^2 - 1 - 4m + 4y \geq 0$$

$$\Rightarrow y^2 - 4y + (\delta^2 - 4m) \geq 0 \Rightarrow \frac{-y^2}{-4} - 1.0 + 1.9m \leq 0 \Rightarrow 1.9m \leq 4$$

$$m \neq \epsilon \rightarrow \frac{n^r + \delta n + \epsilon}{n+1} = n + \epsilon \text{ if } n \neq -1 \quad R_f \neq \mathbb{R} \Rightarrow m \leq \epsilon$$

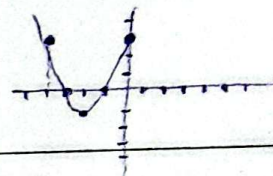


$$m = \{1, 2, 3\}$$

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

Y

$$f(n) = \begin{cases} n^r + r n + r & n \leq 0 \rightarrow R = [-1, +\infty) \\ [r n] - r n & n > 0 \rightarrow R = \{0\} \end{cases} \rightarrow R_f = [-1, +\infty)$$



$$-1 < [0] - 0 < 1$$

$$-1 < [0] - 0 < 1$$

$$\sqrt{r n + r} \quad r n + r \geq 0 \quad r n \geq -r \quad n \geq -\frac{r}{r}$$

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

$$[-\frac{r}{r}, +\infty)$$

$$\text{if } n = -\frac{r}{r} \rightarrow y = 0$$

$$a = a + 1 - \sqrt{r \times \frac{r}{r} + r} \quad (a = \epsilon)$$

$$ab = -\frac{r}{r} \times \epsilon = -\epsilon$$

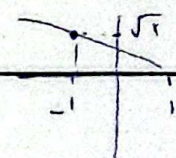
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$$g(n) = r \sqrt{r + r \sqrt{1 - nr}} - f(n), \quad y = \frac{f(n)}{y} - \sqrt{r + r \sqrt{1 - nr}} + \frac{f(n)}{r}$$

$$\Rightarrow \frac{1}{r} f(n) - \sqrt{r + r \sqrt{1 - nr}} \Rightarrow \frac{1}{r} (r \sqrt{n+1} + r \sqrt{1-n}) - \sqrt{r + r \sqrt{1 - nr}}$$

$$\Rightarrow y = \sqrt{n+1} + r \sqrt{1-n} \Rightarrow -\sqrt{r + r \sqrt{1 - nr}} \Rightarrow -1 \leq n \leq 1$$

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



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