

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

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

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

$$rg - 3f = \{ (1, 4), (0, 1), (-1, 2) \}$$

$$R_f = [0, +\infty) \quad 2(3) - 1 = 5$$

$$R_g = (-\infty, 4] \quad \frac{1}{3}(3) + 3 = 4$$

$$R_f \cup R_g = R - (4, 5)$$

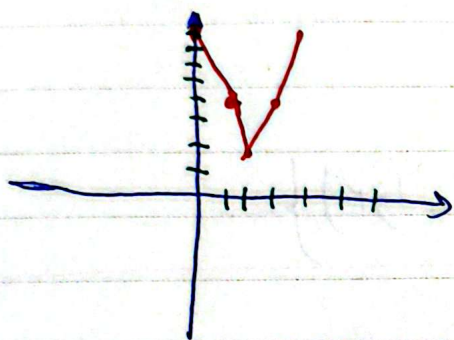
$$-\frac{n^2}{2} + n + 3 > \frac{3}{2} \Rightarrow -\frac{n^2}{2} + n + \frac{3}{2} > 0$$

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

چون مقدار max دارد، در بازه $(-1, 3)$ بزرگترین تراز $\frac{3}{2}$ است

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

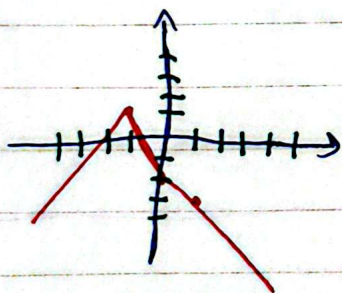
$$| \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} |, | \begin{smallmatrix} 1 \\ 2 \end{smallmatrix} |, | \begin{smallmatrix} 1 \\ 2 \end{smallmatrix} |, | \begin{smallmatrix} 1 \\ 2 \end{smallmatrix} |, | \begin{smallmatrix} 1 \\ 1 \end{smallmatrix} |$$



$$\min = 2$$

کمترین مقدار = 2

$$| \begin{smallmatrix} -1 \\ 1 \end{smallmatrix} |, | \begin{smallmatrix} 0 \\ -2 \end{smallmatrix} |, | \begin{smallmatrix} 1 \\ -3 \end{smallmatrix} |, \quad \begin{array}{c|c|c} -1 & 0 & \\ \hline n+2 & -n-2 & -n-2 \end{array}$$



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

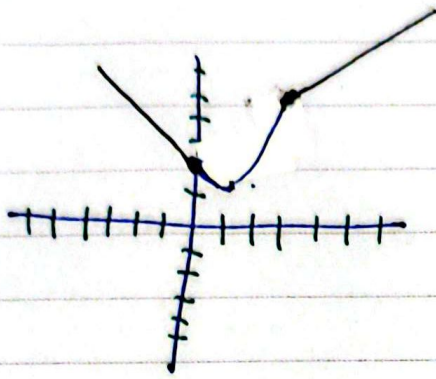
$$y(n+1) = n^r + \omega n + m \Rightarrow n^r + (\omega - y)n + (m - y) = 0$$

$$\Delta = (\omega - y)^2 - 4(m - y) \Rightarrow \Delta = y^2 - 4y + (4\omega - 4m) \geq 0$$

$$(-4)^2 - 4(1)(4\omega - 4m) \leq 0 \Rightarrow 16 - 16\omega + 16m \leq 0 \Rightarrow m \leq \omega$$

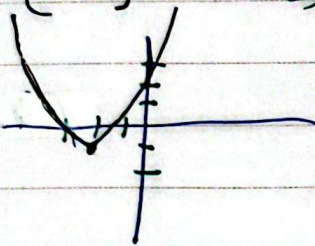
$$m = 1, 2, 3, 4$$

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

$$[r_m] - r_m \Rightarrow \cdot \sqrt{-(r_n - [r_n])} < 1 \Rightarrow (-1, 0] \quad \text{1}$$



$$\left| \frac{-b}{r_a} = \frac{-r}{r} = -r \right| \Rightarrow [-1, +\infty)$$

$$R(f) = (-1, +\infty)$$

$$a r_n + r \geq \cdot \Rightarrow n \geq \frac{-r}{r} \quad b = \frac{-r}{r} \quad \text{19}$$

$$a + 1 = d \quad a = r \quad ab = -4$$

$$f(n) + g(n) = r \sqrt{r + r \sqrt{1-n}} = r \sqrt{((\sqrt{1-n}) + (\sqrt{1+n}))} \quad \text{1. r}$$

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

$$y = \frac{f(n)}{4} - \frac{g}{r} = \frac{f-n}{4} = \frac{r \sqrt{n+1} + r \sqrt{1-n} - r \sqrt{1+n} + r \sqrt{1-n}}{4}$$

$$\Rightarrow \frac{4 \sqrt{1-n}}{4} \Rightarrow y = \sqrt{1-n} \quad R_y = [-1, \sqrt{r}]$$