

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

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

$$R_g = \{2, 0, 1\} \rightarrow (11)$$

$$R_f = [a, +\infty) \quad D_{\min} = r \quad R_{\min} = \omega$$



$$R_g = (-\infty, 1] \quad D_{\max} = r \rightarrow R_{\max} = \frac{1}{r} \times r + r = r$$

$$R_g \cup R_f = (-\infty, 1] \cup [\omega, +\infty)$$

$$-\frac{x^2}{r} + n + r > \frac{r}{r}$$

$$-x^2 + (n+1)r > r$$

$$x^2 - r_n - r < 0$$

$$(n-r)(n+1) < 0$$

$$\begin{array}{c|c} -1 & r \\ \hline + & - \\ \hline \phi & \phi \end{array}$$

$$(a, b) = (-1, 3)$$

$$\sqrt{3(-1)} = \sqrt{3} = r$$

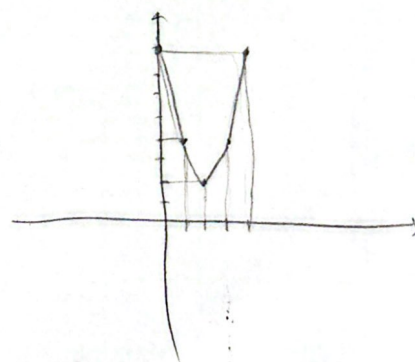
$$y = |n-1| + |n-r| + |n-1|$$

$$1-n+r-n-r+1 = -r$$

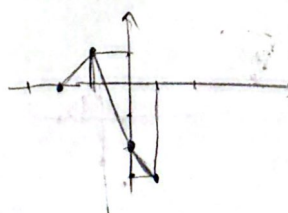
1	2	3
$1-n+r-n-r+1 = -r$	$1-n+r-n-r+1 = -r$	$1-n+r-n-r+1 = -r$
$-r$	$-r$	$-r$

$$\begin{array}{c|c|c|c|c} 1 & 2 & 3 & 4 & 5 \\ \hline 1 & 2 & 3 & 4 & 5 \end{array}$$

$$R_{\min} = r$$



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



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

-1	0	1
$-n+r-n-r = -r$	$-n-r-n-r = -r$	$n-r-n-r = -r$
$-r$	$-r$	$-r$

1	2	3
1	1	1
1	1	1

$$y = \frac{n^2 + 2n + m}{n+1}$$

$$n^2 + 2n + m = y(n+1)$$

$$n^2 + (2-y)n + m = y$$

$$n = \frac{(y-2) \pm \sqrt{(y-2)^2 - 4(m-y)}}{2}$$

$$(y-2)^2 - 4(m-y) = y^2 - 4y + 4 - 4m + 4y = y^2 - 4m + 4$$

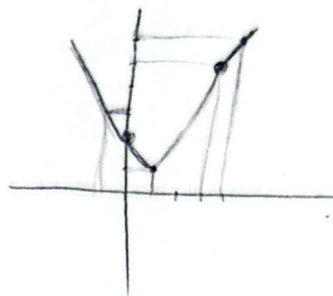
$$y^2 - 4y + 4 - 4m = 0 \Rightarrow y^2 - 4y + 4 = 4m$$

$$y^2 - 4y + 4 = 4m$$

$$y^2 - 4y + 4 = 4m \Rightarrow 1 - 4 + 4m = 4m$$

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

$$f(n) = \begin{cases} n+2 & n \geq 2 \\ n^2 - 2n + 2 & 1 \leq n \leq 2 \\ |n| + 2 & n < 0 \end{cases}$$



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

$$f(n) = \begin{cases} n^2 + 2n + 2 & n \leq 0 \\ (2n) - 2n & n > 0 \end{cases} \Rightarrow \min \begin{cases} -2 \\ -1 \end{cases} \Rightarrow [-1, +\infty) \text{ (I)}$$

$$(I) \cup (II) = [-1, +\infty)$$

$$y = a + 1 - \sqrt{2n+3}$$

$$2n+3 \geq 0$$

$$n \geq -\frac{3}{2}$$

$$b = -\frac{3}{2}$$

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

بیشترین مقدار تابع زمانی اتفاق می افتد که رادیکال کسرین مقدار را داشته باشد. کسرین مقدار رادیکال = 0

$$a = \text{بیشترین مقدار تابع}$$

$$f(n) + g(n) = 3\sqrt{2+2\sqrt{1-n}}$$

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

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

$$= \frac{2\sqrt{n+1} + 2\sqrt{1-n} - 2\sqrt{2+2\sqrt{1-n}}}{4} = \sqrt{n+1} + \sqrt{1-n} - \sqrt{2+2\sqrt{1-n}}$$

$$D_f = D_g = [-1, 1] \Rightarrow \frac{f(-1)}{4} - \frac{g(-1)}{4} = \sqrt{2} \quad \frac{f(1)}{4} - \frac{g(1)}{4} = 0 \Rightarrow R = (0, \sqrt{2}]$$