

۱۸

$f(n) = \sqrt{1-n^2} \rightarrow 1-n^2 \geq 0 \rightarrow -1 \leq n \leq 1 \rightarrow n = 1, 0, -1$
 $f(-1) = \sqrt{0} = 0$
 $f(1) = 0$
 $f(0) = 1$
 $g(-1) = 1$
 $g(0) = \epsilon$
 $g(1) = 2$
 $n = -1 \rightarrow 2g - 3f = 2 - 0 = 2$
 $n = 1 \rightarrow 2g - 3f = \epsilon - 0 = \epsilon$
 $n = 0 \rightarrow 2g - 3f = 1 - 3 = -2$

$Rf = \{2, \epsilon, -2\}$
 $2 + \epsilon + (-2) = \epsilon$ ✓

(۲)

-۱

$f(n) = 2n-1 \rightarrow Df = (-\infty, \infty) \rightarrow f(x) = \infty$
 $g(n) = \frac{1}{n}n+2 \rightarrow Df = (-\infty, \infty) \rightarrow g(x) = \epsilon$
 $Rf = (-\infty, \infty)$
 $Rg = (-\infty, \infty)$
 $\rightarrow (-\infty, \infty) \cup (-\infty, \infty)$ ✓

(۲)

$y = \frac{-n^2}{r} + n + \frac{r}{r} \rightarrow -\frac{n^2}{r} + n + \frac{r}{r} \geq 0 \rightarrow n^2 - rn - r \leq 0$
 $a = -1, b = r$
 $\sqrt{b-a} = \sqrt{\epsilon} = \epsilon$ ✓

(۲)

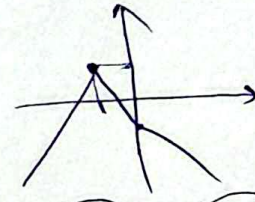
$y = |n-1| + |n-2| + |n-3|$
 $- \epsilon + 1 \quad | \quad -2n+4 \quad | \quad 2n-2 \quad | \quad \epsilon n-1$
 $\min \Rightarrow n = 2$ ✓

(۲)

$y = |n| - 2|m+1|$
 $n+2 \quad | \quad -2n-2 \quad | \quad -n-2$
 $Rf = (-\infty, 1]$ ✓

(۲)

-۲



$y = \frac{n^2 + an + m}{n+1}$
 $y(n+1) = n^2 + an + m \rightarrow yn + y = n^2 + an + m$
 $n^2 + an + yn - y + m = 0$
 $n^2 + (a-y)n + (m-y) = 0$
 $b^2 - 4ac \Rightarrow (a-y)^2 - 4(m-y)$
 $y^2 + 2a - 4ay - \epsilon m + \epsilon y - y^2 - 4y + 4 - \epsilon m \rightarrow 0$
 $19m - 4\epsilon \leq 0 \rightarrow m \leq \frac{4\epsilon}{19}$
 $m = 1, 2, 3$ ✓

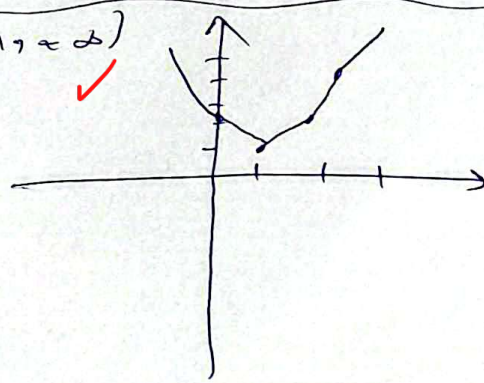
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$f(n) = \begin{cases} n+2 & n \geq 2 \\ n^2 - 2n + 2 & 0 \leq n < 2 \\ |n| + 2 & n < 0 \end{cases}$
 $Rf = [1, \infty)$ ✓

(۲)

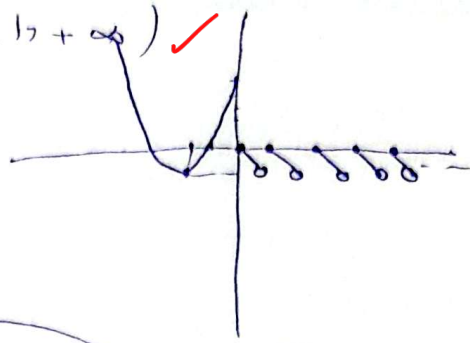
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$$f(m) = \begin{cases} m^2 + m + 1 & ; m \leq 0 \\ [m] - m & ; m > 0 \end{cases}$$

$$Rf = [-1, +\infty)$$

21-1



$$y = a + 1 - \sqrt{m+1} \quad (a \in [b, +\infty)) \quad ab = ?$$

$$\sqrt{m+1} \geq 0 \Rightarrow m \geq -1 \quad \left(\frac{m}{1} = b \right) \quad \checkmark \quad m = -\frac{m}{1} \geq a+1 = 0 \Rightarrow a+1$$

21-9

$$a \geq 0 + 1$$

$$\checkmark$$

$$x = \frac{m}{1} \quad \left(\frac{12}{1} \right) \geq -\varepsilon \quad \checkmark$$

10- صفر حتی پامینه رو بخون!