

19, 70

سندس عندی بازدم دفتر تفلیز نگاره

$$f(x) = \sqrt{1-x^2}$$

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

① ②

$$2g - 3f = \{(-1, 2-3\sqrt{1-(-1)^2}), (0, 2-3\sqrt{1-0^2}), (1, 2-3\sqrt{1-1^2})\}$$

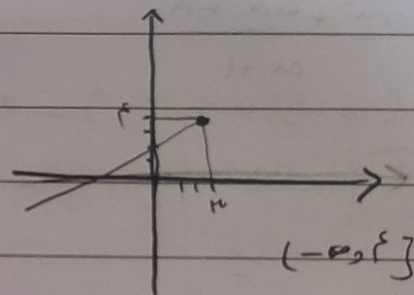
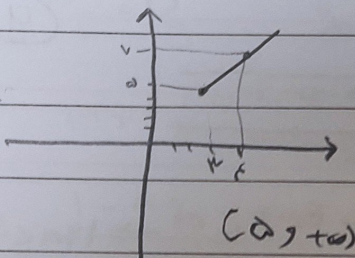
$$= \{(-1, -1), (0, -3), (1, -1)\} \rightarrow 2+1+0=11$$

$$f(x) = 2x - 1$$

$$[2, +\infty)$$

$$g(x) = \frac{1}{2}x + 3$$

②



$$R_f \cup R_g = (-\infty, 4] \cup [3, +\infty)$$

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

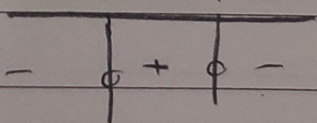
$$(a, b) \rightarrow \frac{r}{r} \rightarrow (\frac{r}{r}, +\infty)$$

$$\sqrt{b-a} \text{ man?}$$

② ③

$$\frac{-x^2}{r} + x + 3 > \frac{r}{r}$$

$$\rightarrow -x^2 + 2x + 4 > 1 \rightarrow -(x-3)(x+1) > 0$$



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

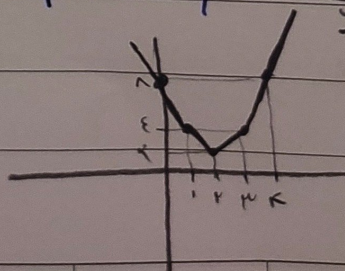
$$\min \sqrt{b-a} \rightarrow \sqrt{3-(-1)} = 2$$

$$y = |x-1| + |x-3| + |2x-4|$$

$$\min y = 2$$

x	0	1	2	3	4
y	4	2	2	4	6

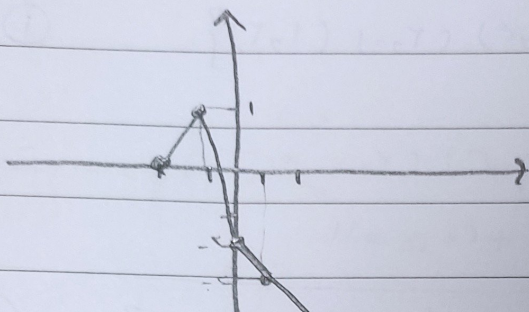
④



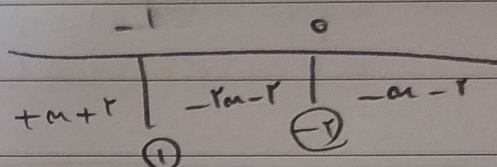
$$y = |a| - 2|a+1|$$

$$\begin{array}{c|ccc} a & -2 & -1 & 0 & +1 \\ \hline y & 0 & 1 & -2 & -3 \end{array}$$

(3) (4)



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



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

$$ya + y = m^2 + \omega a + m$$

(3) (4)

$$\Rightarrow a^2 + (\omega - y)a + m - y = 0 \Rightarrow a = \frac{y - \omega \pm \sqrt{(\omega - y)^2 - 4(m - y)}}{2}$$

$$\Rightarrow y^2 - 4\omega y + 4m \geq 0 \xrightarrow{\Delta \leq 0} 16\omega^2 - 4(4m) \leq 0 \Rightarrow 16\omega^2 \leq 4m \Rightarrow m \geq 4\omega^2$$

$$m \geq 4\omega^2 \Rightarrow \{1, 2, 3\}$$

$$m \leq 4 \Rightarrow \{1, 2, 3\}$$

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

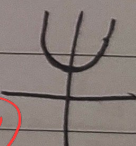
$$R_1 = [0, +\infty)$$

(3)

$$\Rightarrow y = (a-1)^2 + 1 \rightarrow \text{parabola}$$

$$\Rightarrow R_y = [1, +\infty)$$

(3)



$$\begin{array}{c|ccc} a & 0 & 1 & 2 \\ \hline y & 2 & 1 & 2 \end{array}$$

$$\begin{array}{c|ccc} a & 0 & 1 & 2 \\ \hline y & 2 & 1 & 2 \end{array}$$

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

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

$$\rightarrow R_y = (-1, 0]$$

(3)

$$R_1 \cup R_2 = [-1, +\infty)$$

9 $y = a + 1 - \sqrt{2a+1}$ $\Delta = [b, +\infty)$ $\text{بر } (-\infty, a]$ $ab = ?$ (2)

$2a+1 \geq 0 \rightarrow a \geq -\frac{1}{2} \rightarrow b = -\frac{1}{2}$

$\sqrt{2a+1} = 0 \rightarrow a = -\frac{1}{2} \rightarrow y = a = -\frac{1}{2}$
 $y = a + 1 = 0 \rightarrow a = -1$
 $ab = -\frac{1}{2} \times (-1) = \frac{1}{2}$

10 $f(x) = 2\sqrt{x+1} + 4\sqrt{1-x}$ $f(x) + g(x) = 4\sqrt{1+x}$

$P_f = P_g \quad y = \frac{f(x)}{4} - \frac{g(x)}{4}$ (1.75)

$x+1 \geq 0 \rightarrow x \geq -1$

$1-x \geq 0 \rightarrow x \leq 1$

$x \in [-1, 1]$

$f(1) = 2\sqrt{2} \quad f(-1) = 6\sqrt{2}$

$f(0) = 4$

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

$\frac{f(-1)+g(-1)}{6\sqrt{2}} = \frac{4\sqrt{1+(-1)}}{6\sqrt{2}} \rightarrow g(-1) = 4\sqrt{2} - 6\sqrt{2} = -2\sqrt{2}$

$P_g = \frac{f(x)}{4} - \frac{g(x)}{4}$

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

$R = [-1, \sqrt{2}]$