

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

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

$$g - f = \{(-1, 2), (0, 1), (1, 2)\} \quad x + y + z = 11$$

$$f(x) = 2x - 1 \Rightarrow f(x) = 3 \times 2 - 1 = 5 \rightarrow R_f = [5, +\infty)$$

$$g(x) = \frac{1}{2}x + 5 \Rightarrow f(x) = \frac{1}{2} \times 5 + 5 = 5.5 \rightarrow R_g = (-\infty, 5.5]$$

$$R_f \cup R_g = (-\infty, 5.5] \cup [5, +\infty)$$

$$\frac{-x^2}{2} + x + 5 > \frac{5}{2} \rightarrow -x^2 + 2x + 5 > 2.5 \rightarrow -(x^2 - 2x - 2.5) > 0$$

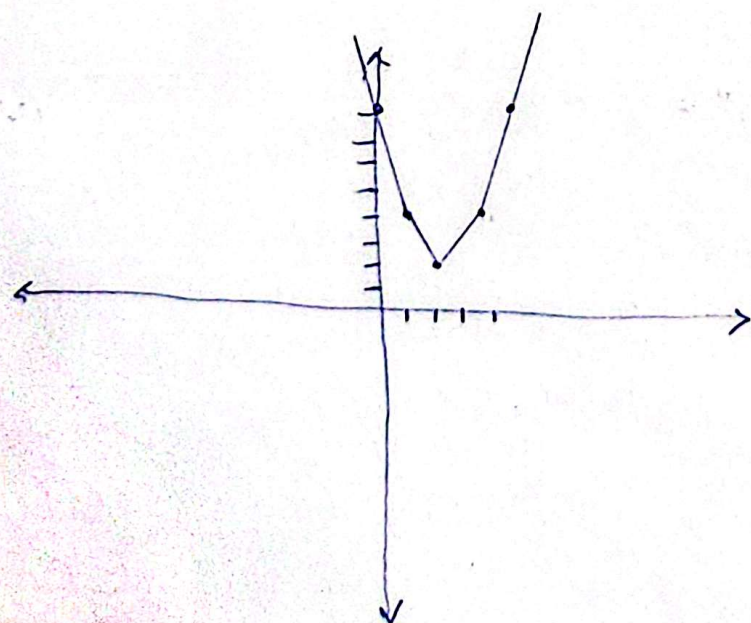
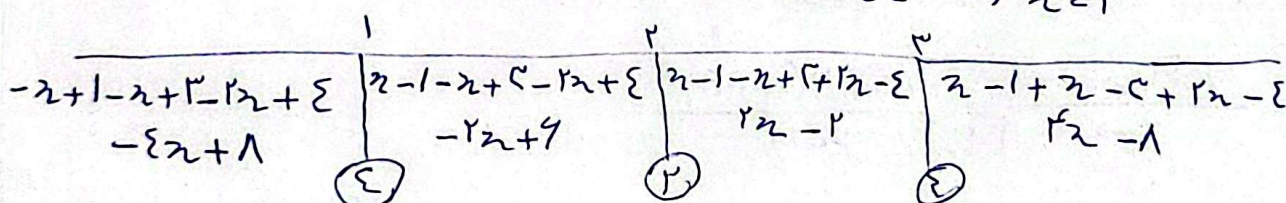
$$\rightarrow x^2 - 2x - 2.5 < 0 \rightarrow (x+1)(x-3) < 0 \quad \frac{-1}{-\phi + \phi -}$$

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

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

$$y = |x-1| + |x-3| + |2x-5|$$

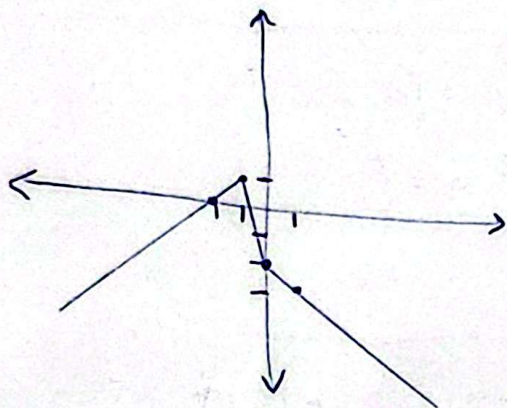
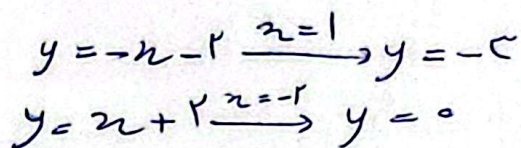
$$\begin{aligned} x-1=0 &\rightarrow x=1 \\ x-3=0 &\rightarrow x=3 \\ 2x-5=0 &\rightarrow x=2.5 \end{aligned}$$



$$\begin{aligned} y &= 4x-9 \xrightarrow{x=3} y=3 \\ y &= -4x+9 \xrightarrow{x=2.25} y=0 \end{aligned}$$

$$\min y = 1$$



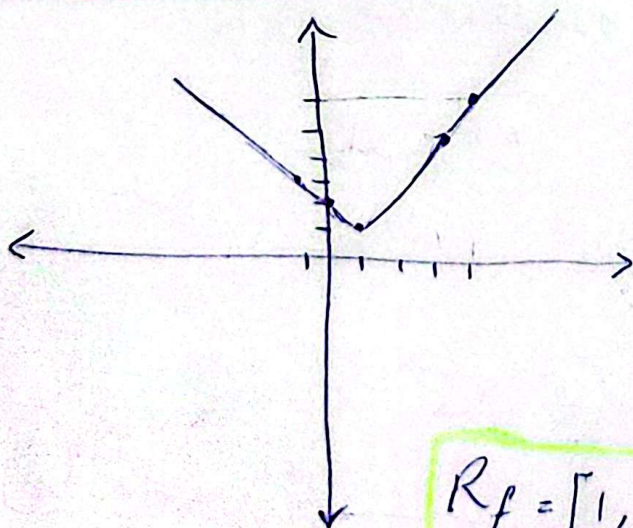


$$R_y = (-\infty, 1]$$

⑨

$$\rightarrow y^2 - 9y + 12 - \varepsilon m \geq 0. \quad \Delta \leq 0 \rightarrow 36 - 4(12 - \varepsilon m) \leq 0$$

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دائیں محوّل میں شود



$$y = 2^r - r + 1 \xrightarrow{r=0} y = 1$$

$$g = (x^r - rx + r) = (x-1)^r + 1 \rightarrow S \Big|_1^1$$

$$y = |z| + r \xrightarrow{z=0} y = r$$

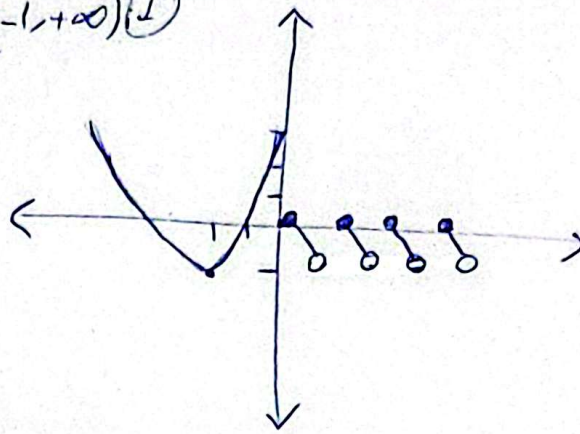
$$\quad \quad \quad \downarrow \xrightarrow{z=-1} y = r$$

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

$$x^2 + 2x + 1 \rightarrow 5 \begin{vmatrix} -1 \\ -1 \end{vmatrix} \rightarrow R = [-1, +\infty) \textcircled{I}$$

$$[12] - 12 \rightarrow R = (-1, 0] \textcircled{II}$$

$$R_f = \textcircled{I} \cup \textcircled{II} = [-1, +\infty)$$



$$x^2 + c > 0 \rightarrow x > \frac{-c}{2} \rightarrow b = \frac{-c}{2}$$

$$y_{\max} \rightarrow \sqrt{x^2 + c} \min \rightarrow \sqrt{x^2 + c} = 0 \rightarrow x = \frac{-c}{2}, y = a$$

$$y = a + 1 - 0 \xrightarrow{y=a} a = 1 + 1 \rightarrow a = 2$$

$$a \times b = \frac{-c}{2} \times 2 = -6$$

$$f(x) = 2\sqrt{x+1} + 2\sqrt{1-x} \quad \left. \begin{array}{l} x+1 > 0 \rightarrow x > -1 \\ 1-x > 0 \rightarrow x < 1 \end{array} \right\} x = [-1, 1] \textcircled{10}$$

$$f(1) = 2\sqrt{2} \quad f(1) + g(1) = 2\sqrt{2+2\sqrt{1-(1)^2}} = 4\sqrt{2}$$

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

$$f(-1) = 2\sqrt{2} \quad f(-1) + g(-1) = 2\sqrt{2+2\sqrt{1-(-1)^2}} = 4\sqrt{2}$$

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

$$y = \frac{f(x)}{x} - \frac{g(x)}{c} \quad \begin{array}{l} x=1, y = \frac{2\sqrt{2}}{1} - \frac{\sqrt{2}}{2} = 0 \\ x=-1, y = \frac{2\sqrt{2}}{-1} - \frac{-\sqrt{2}}{2} = \sqrt{2} \end{array}$$

$$R_y = [0, \sqrt{2}]$$