

Subject:



Page: ()

تلف مناجير، وازهره زنده B

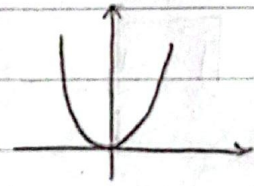
$$\begin{aligned} \text{الف) } y^2 - 2x^2 - 2x - 1 &\xrightarrow[\text{مربع}]{\text{تعويض}} y^2 - 2x_1^2 + 2x_1 - 1 \\ y^2 - 2x_1^2 + 2x_1 - 1 &\xrightarrow{2x_1 \pm 1} y_1^2 - 2y_2^2 \Rightarrow y_1 = y_2 \end{aligned}$$

ب) $x \cos y = y \cos x$ $\xrightarrow{\text{مربعين}} x = \pi, y \Rightarrow y \in \mathbb{R} \quad x$

ج) $\frac{x+y}{2} = \sqrt{xy} \Rightarrow x+y = 2\sqrt{xy} \Rightarrow x+y - 2\sqrt{xy} = (\sqrt{x} - \sqrt{y})^2 = 0$
 $\Rightarrow x = y \quad \checkmark$

$\Rightarrow xy^2 + 2x - y^3 - 2y = 0 \Rightarrow (y^2 + 2)x - (y^3 + 2)y = (y^2 + 2)(x - y) = 0$
 $\Rightarrow x = y \quad \checkmark$

الف) $|y| + x^2 = 2y \xrightarrow[\text{(جواب)}]{\text{غوطا}} \begin{cases} y > 0 & y = x^2 \\ y < 0 & y = \frac{x^2}{2} \end{cases}$



ب) $[y] + [x] = 1 \xrightarrow{\text{مربعين}} x = 0 \Rightarrow y \in [1, 2) \quad x$

$f(x) = \begin{cases} 2x^2 - b & |x-1| > 2 \\ a + 2x & 0 \leq x \leq 3 \end{cases} \xrightarrow{\text{مربعين}} \begin{aligned} |x-1| > 2 &\Rightarrow x-1 > 2 \Rightarrow x > 3 \\ &\text{مربعين} \\ 0 \leq x \leq 3 &\Rightarrow x-1 \leq -2 \Rightarrow x \leq -1 \end{aligned}$

$x = 3 \Rightarrow 1x - b = a + 4 \Rightarrow \boxed{1x = a + b}$

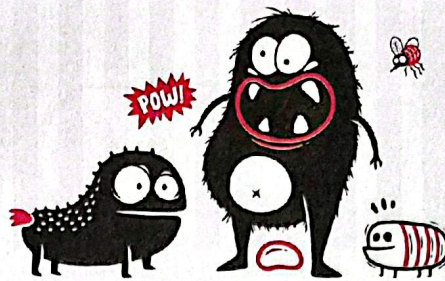
ب) $f(x) = \sqrt{a - bx - x^2} \quad \forall x \in [b, a] \xrightarrow{\text{مربعين}} \begin{aligned} &\frac{b}{a} \leq f(x) \leq \frac{a}{b} \Rightarrow f(x) = \sqrt{a - bx - x^2} \\ &\xrightarrow{\text{مربعين}} -x^2 - bx + a \geq 0 \Rightarrow x^2 + bx - a \leq 0 \Rightarrow b^2 + b^2 - a \leq 0 \Rightarrow a \geq 2b^2 \\ &\xrightarrow{a \geq 2b^2} a^2 + ab - a = 0 \Rightarrow a(a + b - 1) = 0 \Rightarrow a \neq 0, a + b = 1 \\ &\xrightarrow{a \geq 2b^2} 2b^2 + b - 1 \leq 0 \Rightarrow (2b - 1)(b + 1) \leq 0 \Rightarrow b \in [-1, \frac{1}{2}] \\ &\Rightarrow a \leq 2b^2 \leq 2 \Rightarrow a + b \leq 1 \end{aligned}$



كلا

Subject :

Page : ()



$$y = \frac{x^2}{\sqrt{ax^2 + bx + c}} \quad D = (-\infty, 2) \rightarrow a = 0 \text{ غیر شیب خط است و } (2)$$

$$\frac{x^2}{+ \sqrt{-}} \rightarrow \text{شیب مثبت} \rightarrow \sqrt{bx + c} \text{ و } \sqrt{2b + c} \rightarrow c > -2b$$

$$\text{غیر شیب خط منفی است} \Rightarrow b < 0 \rightarrow |b| > -b \quad 2a + c - 3|b| > 0 \rightarrow -2b - 3(-b) > -2b + 3b > 0 \quad (2)$$

$$y = \sqrt{\frac{x^2 + 2}{x + b}} + a \quad D = (2, +\infty) \rightarrow \text{شیب مثبت است} \Rightarrow x + b = x - 2 \quad (2) \quad b = -2$$

$$\text{الف)} \sqrt{x^2 - 1} = \sqrt{x(x^2 - 1)} \quad \frac{-1}{-} \frac{0}{+} \frac{1}{-} \quad [-1, 0] \cup [1, +\infty) = D \quad (2)$$

$$\text{ب)} y = \frac{1}{\sqrt{|x| - 1}} \rightarrow |x| - 1 > 0 \rightarrow |x| > 1 \rightarrow x > 1 \rightarrow (1, +\infty) \cup (-\infty, -1) \rightarrow x < -1$$

$$\text{الف)} \frac{1}{\sqrt{|x| - [x]}} \quad \text{فرضه ۳ ام} \quad |x| - [x] \neq 0 \rightarrow |x| \neq [x] \rightarrow \mathbb{R} - \mathbb{W} \quad (1)$$

$$\text{ب)} \sqrt{x} + \sqrt{y} \leq 9 \rightarrow \sqrt{y} \leq 9 - \sqrt{x} \rightarrow x > 0 \quad \text{همین کار را بر روی محور انجام دهیم} \quad [0, 81]$$

$$y = \sqrt{[2x - 1/2] + [2x + 1/2]} \rightarrow [2x - 1/2] + [2x + 1/2] > 0 \quad (9)$$

$$\text{YAAAA!} \quad [2x - 1/2] + [2x - 1/2] + 2 > 0 \rightarrow 2x + 2 > 0 \rightarrow x > -1 \rightarrow [2x - 1/2] > -1 \Rightarrow 2x - 1/2 > 0 \rightarrow x > 1/4$$

$$y = \sqrt{1 - \log(2x - a)} \rightarrow 2x - a > 0 \rightarrow x > a/2 \quad (1) \quad 1 - \log(2x - a) \geq 0 \rightarrow \log 2x - a \leq 1 \rightarrow 2x - a \leq 10 \rightarrow x \leq 5 + a/2 \quad (2) \rightarrow (a/2, 5 + a/2] \rightarrow c - b \leq 5 \quad \text{کاما}$$

