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تلف مناجير، وازهره رنر B

$$\begin{aligned} \text{الف) } y^2 - 2x^2 &= 2x - 1 \quad \xrightarrow{\text{تعويض}} \quad y^2 - 2x_1^2 + 2x_1 - 1 \\ &\quad \xrightarrow{\text{تبسيط}} \quad y^2 - 2x_1^2 + 2x_1 - 1 = 0 \quad \xrightarrow{\text{مقسومين}} \quad y_1^2 - 2y_2^2 \Rightarrow y_1 = y_2 \checkmark \end{aligned}$$

ب) $x \cos y = y \cos x$ $\xrightarrow{\text{مشتق}} x = \pi, y \Rightarrow y \in \mathbb{R} \quad \checkmark$ (r)

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

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

الف) $|y| + x^2 = 2y \quad \xrightarrow{\text{مخطط (نقطة)}} \begin{cases} y > 0 & y = x^2 \\ y < 0 & y = \frac{x^2}{3} \end{cases}$ (r)

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

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

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

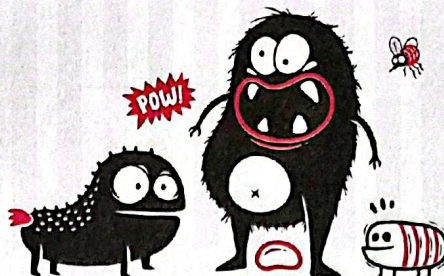
ب) $f(x) = \sqrt{a - bx - x^2}$ $\text{Dp} \in [b, a] \Rightarrow \begin{matrix} b & a \\ + & - \\ - & + \end{matrix} \quad f(x) = 0 \text{ جواب } b \text{ و } a$
 $\hookrightarrow -x^2 - bx + a \geq 0 \Rightarrow x^2 + bx - a \leq 0 \Rightarrow b^2 + b^2 - a \leq 0 \Rightarrow a \geq 2b^2$
 $x > a \Rightarrow a^2 + ab - a = 0 \Rightarrow a(a+b-1) = 0 \Rightarrow a \neq 0, a+b=1$
 $a \geq 2b^2 \Rightarrow 2b^2 + b - 1 \leq 0 \Rightarrow (2b-1)(b+1) \leq 0 \Rightarrow b \in \mathbb{Z} \Rightarrow b = -1$
 $\Rightarrow a \leq 2b^2 \leq 2 \Rightarrow a+b \leq 1 \quad \checkmark$ (r)



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$y = \frac{x}{\sqrt{ax^2 + bx + c}}$ $D = (-\infty, 2) \rightarrow a = 0$ (r)

$\frac{x}{-} \rightarrow \sqrt{bx + c} \rightarrow \sqrt{2b + c} \rightarrow c = -2b$

$b < 0 \rightarrow |b| = -b \quad 2a + c - 3|b| = 0 + -2b - 3(-b) = -2b + 3b = b$

$y = \sqrt{\frac{x^2 + 2}{x + b}} + a \quad D = (2, +\infty) \rightarrow x + b = x - 2$ (r)
 $b = -2$

$\sqrt{x^2 - 1} = \sqrt{x(x^2 - 1)}$ $-1 \leq x \leq 1$ $D = [-1, 0] \cup [1, +\infty)$ (r)

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

$\frac{1}{|x| - [x]} \neq 0 \rightarrow |x| \neq [x] \rightarrow \mathbb{R} \setminus \mathbb{N}$ (r)

$\sqrt{x} + \sqrt{y} \leq 9 \rightarrow \sqrt{y} \leq 9 - \sqrt{x} \rightarrow x \geq 0$ (r)
 $[0, 81]$

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

$[2x - 1/2] + [2x - 1/2] + 2 > 0 \rightarrow 2x + 2 > 0 \rightarrow x > -1$ (r)
 $[2x - 1/2] > -1 \rightarrow 2x - 1/2 > 0 \rightarrow x > 1/4$



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