

الف) $y^2 - 2x^2 = 2x - 1 \rightarrow y^2 = 2x^2 + 2x - 1$ تابع $y = \sqrt{2x^2 + 2x - 1}$	ب) $x = \frac{1}{2} \rightarrow y = 0$ تابع $y = 2x + \frac{1}{2}$	۱
۲) $x + y = 2\sqrt{xy} \rightarrow x + y - 2\sqrt{xy} = 0 \Rightarrow$ $(\sqrt{x} - \sqrt{y})^2 = 0 \rightarrow \sqrt{x} = \sqrt{y}$ تابع	د) $xy^2 + 2x - y^3 - 2y = 0 \Rightarrow xy^2 + 2x = y^3 + 2y$ $x(y^2 + 2) = y(y^2 + 2) \Rightarrow x = y$ تابع	۲
الف) $ y + x^2 = 2y \Rightarrow$ $y \geq 0 \rightarrow y + x^2 = 2y \rightarrow x^2 = y$ ✓ $y < 0 \rightarrow -y + x^2 = 2y \rightarrow x^2 = 3y$ ✗ تابع $y = x^2$	ب) $x = 0$ $[x] + 0 = 1 \rightarrow [x] = 1$ $y \in [1, 2)$ تابع	۳
$\begin{cases} 2x^2 - b & x > 1 \\ a + 2x & 0 < x \leq 1 \\ 2x^2 - b & x \leq -1 \end{cases} \xrightarrow{x=1} \begin{cases} 2x^2 - b = a + 2x \\ 1 - b = a + 2 \\ 1 - 4 = a + b \end{cases} \rightarrow \boxed{12 = a + b}$		۴
$-x^2 - bx + a \geq 0 \rightarrow x^2 + bx - a \leq 0 \rightarrow \frac{b}{2} - \frac{a}{4} \leq 0$ $a > b \rightarrow a - b = -a + b = -1$ $a + b = -b \rightarrow a = -2b \rightarrow a = 2$ $a + 2 = 2 - 1 = 1$		۵
$a(x^2 + bx + c) > 0 \rightarrow \boxed{a = 0}$ $\hookrightarrow b(x + c) > 0 \rightarrow \frac{r}{b} - \frac{c}{b} > 0$ $\hookrightarrow x = r \rightarrow r + c = 0 \rightarrow \boxed{c = -r}$	$\begin{cases} 2a + c - 2 b \\ 0 - 2b - 2(-b) = \boxed{b} \end{cases}$	۶

$$\sqrt{\frac{r_n + r}{n + b}} + a$$

$$n + b = 0$$

$$r + b = - \rightarrow b = -r$$

دالة الجذر المتعرج اقل

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الف) $y = \sqrt{n^2 - n} \rightarrow n^2 - n > 0$
 $n(n^2 - 1) > 0 \rightarrow \frac{-1}{-1} + \frac{0}{0} + \frac{1}{1}$
 $D_f: [-1, 0] \cup [1, +\infty)$

$\Rightarrow y = \frac{1}{\sqrt{|n| - 1}} \rightarrow |n| - 1 > 0$
 $|n| > 1$
 $\rightarrow n > 1$
 $n^2 < -1$
 $D_f: (-\infty, -1) \cup (1, +\infty)$

✓

الف) $|n| \neq [n]$
 $\downarrow$
 $n \notin \mathbb{Z}$
 $D_f: n - 2$

ب) $\sqrt{n} + \sqrt{5} = 9 \rightarrow \sqrt{5} = 9 - \sqrt{n}$
 $9 - \sqrt{n} > 0 \rightarrow 9 > \sqrt{n}$
 $n > 0$, $n \leq 81$
 $D_f: [0, 81]$

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$[r_n - \frac{1}{r}] + [r_n + \frac{r}{r}] > 0 \rightarrow [r_n - \frac{1}{r} + r - r] + [r_n + \frac{r}{r}] > 0 \Rightarrow$
 $2[r_n + \frac{r}{r}] - 2 > 0 \rightarrow 2[r_n + \frac{r}{r}] > 2 \rightarrow [r_n + \frac{r}{r}] > 1 \Rightarrow$
 $r_n + \frac{r}{r} \geq 2 \rightarrow r_n \geq \frac{1}{r} \rightarrow n \geq \frac{1}{r}$
 $D_f: [\frac{1}{r}, +\infty)$

✓

$r(n - a) > 0 \rightarrow r(n) > a \rightarrow n > \frac{a}{r}$
 $1 - g(r(n - a)) > 0 \rightarrow 1 > g(r(n - a)) \rightarrow 1 > r(n - a) \rightarrow \frac{1 + a}{r} > n$
 $\frac{a}{r} < n \leq \frac{1 + a}{r} \rightarrow b = \frac{a}{r}$
 $c = \frac{1 + a}{r}$
 $c - b = \frac{1 + a}{r} - \frac{a}{r} = \frac{1}{r} = 2$

✓