

II

ب)
$$y^2 - 1 \xrightarrow{y^2 - 1} y^2 - 1 \xrightarrow{y^2 - 1} y^2 - 1$$

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ب)
$$x \cos y = y \cos x \xrightarrow{x = \frac{\pi}{2}} x = \frac{\pi}{2} \rightarrow y = \frac{\pi}{2}$$

ج)
$$\frac{x+y}{2} \geq \sqrt{xy} \rightarrow x+y \geq 2\sqrt{xy} \rightarrow x^2 + y^2 + 2xy \geq 4xy \rightarrow x^2 + y^2 - 2xy \geq 0$$

$$\rightarrow (x-y)^2 \geq 0 \rightarrow x=y$$

د)
$$x^2 + 2x - y^2 - 2y \geq 0 \rightarrow x(y^2 + 2) - y(y^2 + 2) \geq 0 \rightarrow (x-y)(y^2 + 2) \geq 0$$

$$x=y$$

الف)
$$|y| + x^2 = 2y \rightarrow y \geq 0 \rightarrow |y| = y \rightarrow y + x^2 = 2y \rightarrow x^2 = y$$

$$y < 0 \rightarrow |y| = -y \rightarrow -y + x^2 = 2y \rightarrow x^2 = 3y$$

 مین $x^2 \geq 0$ است $y \geq 0$ $y < 0$ است

ب)
$$[y] + [x] \geq 1 \xrightarrow{[x] + [y] \geq 1} x \geq 1 \rightarrow y \in [0, 1]$$

$$n \geq 3 \leftarrow n-1 \geq 2$$

$$n \leq -1 \leftarrow n-1 \leq -2$$

$$2 \times (2)^2 - b = a + 6 \rightarrow a + b = 18 - 6 \rightarrow a + b = 12$$

$$\frac{b \ a}{-\phi + \phi -} \quad \begin{array}{l} a \rightarrow a - ba - a^2 z^0 \\ b \rightarrow a - b^2 - b^2 z^0 \rightarrow a - 2b^2 z^0 \end{array} \quad \begin{array}{l} a(1-b-a)z^0 \\ 1-b-a z^0 \rightarrow 1 z^0 b+a \end{array}$$

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$$a z^0 \rightarrow b n + c z^0 \rightarrow 2b + c z^0 \rightarrow c z^0 - 2b \rightarrow b < 0 \quad 2a + c - 3|b| \xrightarrow{a z^0} c - 3|b|$$

$$\xrightarrow{b < 0} |b| z^0 - b \rightarrow -2b - 3(-b) z^0 \boxed{b}$$

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$$1 + b z^0 \rightarrow b z^0 - 2$$

٢٦ $n \geq 4$ فقط منصف، $n \geq 4$ مخرج بزرگتر منصف شود.

$$y = \sqrt{x^2 - n} \quad n^2 - n \geq 0 \rightarrow n(n^2 - 1) \geq 0 \rightarrow \underset{1}{n} \underset{1}{(n-1)} \underset{-1}{(n+1)} \geq 0 \rightarrow \frac{-1}{-1+1-1+1}$$

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$$D_f = [-1, 0] \cup [1, +\infty)$$

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

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$$ا) y = \sqrt{\frac{1}{|n| - [n]}} \rightarrow |n| - [n] \neq 0 \rightarrow [n] \neq |n| \quad D_f = \mathbb{R} - \{\mathbb{Z}^+, 0\}$$

$$ب) \sqrt{x} + \sqrt{y} \geq 9 \quad x \geq 0, y \geq 0 \quad \sqrt{y} \geq 9 - \sqrt{x}$$

$$9 - \sqrt{x} \geq 0 \rightarrow \sqrt{x} \leq 9 \rightarrow x \leq 81$$

$$\textcircled{1} \cap \textcircled{2} \rightarrow D_f = [0, 81]$$

[9]

$$y = \frac{1}{\sqrt{[r_n - \frac{1}{r}] + [r_n + \frac{r}{r}]}} \rightarrow r_n + \frac{r}{r} = r_n + r - \frac{1}{r} \rightarrow [r_n + \frac{r}{r}] = [r_n - \frac{1}{r}] + r$$

$$[r_n - \frac{1}{r}] + [r_n - \frac{1}{r}] + r = r[r_n - \frac{1}{r}] + r \rightarrow r[r_n - \frac{1}{r}] + r > 0$$

$$[r_n - \frac{1}{r}] + 1 > 0 \rightarrow [r_n - \frac{1}{r}] \geq 0 \rightarrow r_n - \frac{1}{r} \geq 0 \rightarrow r_n \geq \frac{1}{r} \rightarrow n \geq \frac{1}{\varepsilon}$$

$$D_f = [\frac{1}{\varepsilon}, +\infty)$$

[10]

$$y = \sqrt{1 - \log(r_n - a)} \rightarrow r_n - a > 0 \quad 1 - \log(r_n - a) \geq 0 \quad \log(r_n - a) \leq 1$$

$$r_n - a \leq 10 \rightarrow 0 < r_n - a \leq 10 \rightarrow a < r_n \leq a + 10 \rightarrow \frac{a}{r} < n \leq \frac{a+10}{r}$$

$$b = \frac{a}{r}, \quad c = \frac{a+10}{r} \rightarrow c - b = \frac{a+10}{r} - \frac{a}{r} \rightarrow \underline{c - b = \Delta}$$