

(A)

(الف)

(ب)

1

۲

3

$$(A \times B)(B \times B) = \{1, 2\}, \{1, 3\}$$

P

5

$$n=1 \rightarrow n^2-1 = an+b \rightarrow 0 = a+b$$

$$n=2 \rightarrow an+b = n^2 \rightarrow 2a+b = 4$$

$$\begin{cases} a+b=0 \\ 2a+b=4 \end{cases} \rightarrow \begin{cases} -a-b=0 \\ 2a+b=4 \end{cases} \rightarrow \begin{cases} -a-b=0 \\ -b=4 \end{cases} \rightarrow \begin{cases} -a-b=0 \\ b=-4 \end{cases} \rightarrow \begin{cases} -a-(-4)=0 \\ b=-4 \end{cases} \rightarrow \begin{cases} -a+4=0 \\ b=-4 \end{cases} \rightarrow \begin{cases} a=4 \\ b=-4 \end{cases}$$

$$-4+4 = -4f \leftarrow a \cdot b$$

$$n=k \rightarrow 2n-3 = k-3n$$

$$2n+3n = k+3 \rightarrow 5n = k+3 \rightarrow n = \frac{k+3}{5}$$

$$n=k \rightarrow k = \frac{k+3}{5}$$

$$\text{الف) } y^2 - xy = n^2 - 2n + 3 \rightarrow y^2 - 0y = x \rightarrow \text{تابع نیست}$$

$$\text{ب) } |n| + |y| = 3 \rightarrow n=0 \rightarrow |y| = 3 \rightarrow y = \pm 3 \rightarrow \text{تابع نیست}$$

$$\text{ج) } |y| = \sqrt{1 - \cos n} \rightarrow \cos n = 0 \rightarrow n = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$$

$$\text{د) } y^2 + 2y + 2n + 1 = 0 \rightarrow y^2 + 2y + 1 = 0 \rightarrow y = 0 \rightarrow n = -1 \rightarrow \text{تابع است}$$

$$\text{الف) } \sqrt{y} + n^2 = 2n - 2 \rightarrow \sqrt{y} = -n^2 + 2n - 2 \rightarrow n = n_1 \rightarrow \sqrt{y} = \sqrt{y_1}$$

$$\text{ب) } y^2 + 2y = \omega n \rightarrow y_1^2 + 2y_1 = \omega n_1 \rightarrow y_1^2 + 2y_1 = y_2^2 + 2y_2 \rightarrow y_1 = y_2$$

$$y_1^2 + 2y_1 - y_2^2 - 2y_2 = 0 \rightarrow (y_1 - y_2)(y_1 + y_2 + 2) = 0 \rightarrow y_1 = y_2$$

$$(y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2 + 2) = 0 \rightarrow y_1 = y_2$$

$$\text{الف) } n \sin y = y \sin n \rightarrow y = \frac{n}{\sin n} \rightarrow n = 0$$

$$\text{ب) } \sqrt{\frac{n}{y}} + \sqrt{\frac{y}{n}} = 2 \rightarrow \frac{n}{y} = \frac{y}{n} \rightarrow n = y \rightarrow \text{تابع است}$$