

این $\cos$ بر این فرض است ، y می تواند هر عددی باشد ، تابع زوج است ✓

ب) $x \cos y = y \cos x$

$$1) xy' + y - y^2 - y = 0 \quad x(y' + 1) - y(y' + 1) = 0 \quad \underline{(y' + 1)}(x - y) = 0$$
$$x - y = 0 \quad x = y \quad + 0/0 \quad \checkmark \quad \text{imag. 6}$$

$$f(n) = \begin{cases} rnr - b & |n-1| \geq r \\ a + rn & 0 \leq n \leq r \end{cases} \rightarrow \begin{cases} rnr - b & n \geq r \\ a + rn & 0 \leq n \leq r \\ rnr - b & n \leq -1 \end{cases} \wedge \rightarrow r$$

$$\frac{r(r)r - b}{1} = \frac{a + r(r)}{4}$$

$$a + b = 12 \checkmark$$

$ab = \frac{c}{a} = -a \quad ab + a = 0 \quad a(b+1) = 0 \rightarrow -r(b+1) = 0 \quad -rb^2 - rb = 0$
 $\xrightarrow{b^2 - r} b^2 + b = 0 \quad b(b+1) = 0 \rightarrow \begin{matrix} b=0 & a=0 \text{ (not allowed)} \\ b=-1 & a=r \end{matrix} \quad (a \neq 0)$
 $a+b = r-1 = 1$

$ax^2 + bx + c > 0$ $\frac{+}{+} \frac{-}{-}$ $a = 0$ $a > 0$ $a < 0$
 $bx + c = 0$ $bx = -c$ $b > 0$ $b < 0$
 $\frac{+}{+} \frac{-}{-} \frac{+}{+} \frac{-}{-} = -bx - \underbrace{+|b|}_{b < 0} \Rightarrow -bx + \underbrace{+b}_{b < 0} = \boxed{b} \checkmark$

$$\frac{kn+r}{n+b} + a \geq 0$$

$$\frac{(k+a)n + r+ab}{n+b} \geq 0$$

$$\frac{r}{-1} +$$

$$k+b=0 \quad b=-k \quad \checkmark$$

$$k+a=0 \quad a=-k \quad \checkmark$$

مربع n غير موجود
في المقام

(r) (4)

$$\text{اذا } y = \sqrt{n^2 - n} \Rightarrow n(n+1)(n-1) \geq 0$$

$$\frac{-1}{-1+1-1} +$$

$$[-1, 0] \cup [1, +\infty) \quad \checkmark$$

$$\rightarrow y = \frac{1}{\sqrt{|n|-1}}$$

$$|n|-1 > 0$$

$$|n| > 1$$

$$n > 1$$

$$n < -1$$

$$D_f = (-\infty, -1) \cup (1, +\infty) \quad \checkmark$$

(r) (v)

$$\text{اذا } y = \sqrt{\frac{1}{|n|-[n]}}$$

$$|n| - [n] \neq 0$$

$$|n| \neq [n]$$

$$D_f = \mathbb{R} - \mathbb{W} \quad \checkmark$$

$$\rightarrow \sqrt{x} + \sqrt{y} = 9$$

$$\sqrt{y} = 9 - \sqrt{x} \geq 0$$

$$\sqrt{x} \leq 9$$

$$x \leq 81$$

$$x \geq 0$$

$$D_f = [0, 81] \quad \checkmark$$

(r) (1)

$$\left[kn - \frac{1}{r}\right] + \left[kn + \frac{r}{r}\right] > 0$$

$$+1+1$$

$$\left[kn + \frac{r}{r}\right] + \left[kn + \frac{r}{r}\right] > r$$

$$r \left[kn + \frac{r}{r}\right] > r$$

$$\left[kn + \frac{r}{r}\right] > 1$$

$$kn + \frac{r}{r} \geq 1$$

$$kn \geq \frac{1}{r}$$

$$n \geq \frac{1}{r} \quad \checkmark$$

$$D_f = \left[\frac{1}{r}, +\infty\right)$$

(r) (4)

$$y = \sqrt{1 - \log(kn-a)}$$

$$D = (b, c]$$

$$c-b=?$$

$$kn-a > 0$$

$$n > \frac{a}{r} \quad (1)$$

$$1 - \log_{10} kn - a \geq a$$

$$\log_{10} kn - a \leq 1$$

$$kn - a \leq 10$$

$$kn \leq 10 + a$$

$$n \leq \frac{10+a}{r} \quad (2)$$

$$b = \frac{a}{r}$$

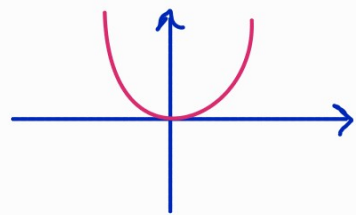
$$c = \frac{a+10}{r}$$

$$c-b = \frac{a+10}{r} - \frac{a}{r} = \frac{a+10-a}{r} = \frac{10}{r} \quad \checkmark$$

(r) (10)

۲- طرف چپ تساوی همواره مثبت است پس طرف راست هم باید مثبت باشد: $y > 0$

$$|y| + x^2 = 2y \xrightarrow{y > 0} y = x^2$$



تابع
مربع