

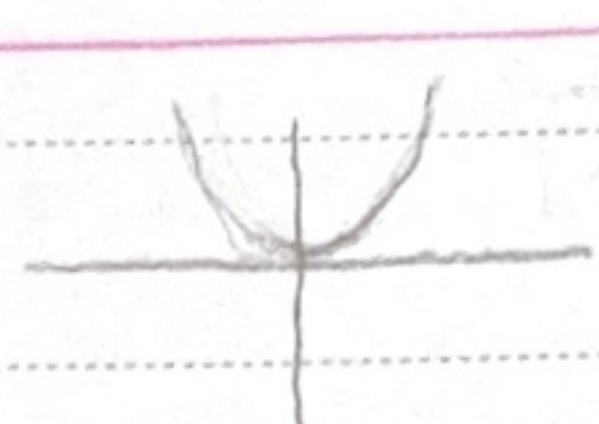
سأینا جفری - روزنامه عصر - ۱۳۸۵

الف) $y'' - 2x' = 2x - 1 \rightarrow y'' = 2x' + 2x - 1$
 $y'' = 2x' + 2x - 1$ } $y_1'' = y_2'' \Rightarrow y_1 = y_2$ تابع نیست.

ب) $x \cos y = y \cos x$ این دو تابع برعکس هستند و یکتا هستند. تابع نیست.

ج) $\frac{x+y}{2} = \sqrt{xy}$ $x+y = 2\sqrt{xy}$ $x+y-2\sqrt{xy} = 0$ $(\sqrt{x}-\sqrt{y})^2 = 0$
 $\sqrt{x} = \sqrt{y}$ $x = y$ تابع نیست.

د) $xy^2 + 2x - y^2 - 2y = 0$ $x(y^2 + 2) - y(y^2 + 2) = 0$ $(y^2 + 2)(x - y) = 0$
 $x - y = 0$ $x = y$ تابع نیست.

الف) $|y| + x^2 = 2y$ $y \geq 0 \rightarrow y = x^2$ $y < 0 \rightarrow y = -x^2$ $y = \frac{x^2}{2}$  تابع نیست.

$[y] + [x] = 1$ if $x = 0 \rightarrow [y] = 1 \rightarrow 1 < y < 2$ تابع نیست.

$f(x) = \begin{cases} x^2 - b & |n-1| \geq 2 \\ a + 2n & 0 \leq n \leq 2 \end{cases} \rightarrow \begin{cases} x^2 - b & n \geq 3 \\ a + 2n & 0 \leq n \leq 2 \\ x^2 - b & n \leq -1 \end{cases} \wedge \rightarrow 4$
 $x(x^2 - b) = a + 2(x)$ $a + b = 12$

$\begin{array}{c} b \quad a \\ - \quad + \quad - \end{array}$ $a+b = -\frac{b}{a} = -b$ $a = -2b$ $[b, a]$ نیست. $g = \sqrt{-x^2 - bx + a}$

$ab = \frac{c}{a} = -a$ $ab + a = 0$ $a(b+1) = 0 \rightarrow -2b(b+1) = 0$ $-2b^2 - 2b = 0$
 $b^2 + b = 0$ $b(b+1) = 0 \rightarrow b = 0$ $a = 0$ $a \neq 0$ $a = -2b$ $a + b = -2b - b = -3b = 1$

$ax^2 + bx + c > 0$ $\frac{1}{+} \frac{1}{-}$ $a = 0$ $b < 0$

$2b + c = 0$ $2b = -c$ $2a + c - 2|b| = -2b - 2|b| \Rightarrow -2b + 2b = 0$

$$\frac{kn+r}{n+b} + a \geq 0 \quad \frac{(k+a)n + r+ab}{n+b} \geq 0 \quad (4)$$

$\frac{r}{-} \mid +$ $\rightarrow$ $k+b=0 \quad b=-k$
 $k+a=0 \quad a=-k$

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

$$\text{ايف) } y = \sqrt{n^2 - n} \Rightarrow n(n+1)(n-1) \geq 0 \quad [-1, 0] \cup [1, +\infty)$$

$$\rightarrow y = \frac{1}{\sqrt{|n|-1}} \quad |n|-1 > 0 \quad |n| > 1 \quad n > 1 \quad n < -1$$

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

$$\text{ايف) } y = \sqrt{\frac{1}{|n| - [n]}} \quad |n| - [n] \neq 0 \quad |n| \neq [n]$$

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

$$\rightarrow \sqrt{x} + \sqrt{y} = 9 \quad \sqrt{y} = 9 - \sqrt{x} \geq 0 \quad \sqrt{x} \leq 9 \quad x \leq 81$$

$$x > 0 \quad D_f = [0, 81]$$

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

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

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

$$y = \sqrt{1 - \log(kn - a)} \quad D = (b, c] \quad c - b = ? \quad (10)$$

$$kn - a > 0 \quad n > \frac{a}{r} \quad (1)$$

$$1 - \log_{10} kn - a \geq 0 \quad \log_{10} kn - a \leq 1 \quad kn - a \leq 10$$

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

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

$$c - b = \frac{a+10}{r} - \frac{a}{r} = \frac{10}{r} = (10)$$