

Date:

Sub:

(الف) $y_1'' = 2x^2 + 2x - 1$

$y_2'' = 2x^2 + 2x - 1$

$\Rightarrow y_2' = y_1' \Rightarrow y_2 = y_1$ تابع بودن

ب) $x \cos y = y \cos x$

مثال نقضی اگر x را صفر گرفته و y را هر عدد دلخواه نقض می شود

$0 \cos y \neq y \cos 0$

تابع نبوده

ج) $x + y = 2\sqrt{xy} \Rightarrow$

د) $x + y^2 + 2x = y^3 + 2y \Rightarrow (y^2 + 2)x = y^3 + 2y \Rightarrow x = \frac{y(y^2 + 2)}{y^2 + 2} \Rightarrow x = y$ تابع بودن

$|x-1| \geq 2 \Rightarrow x-1 \geq 2, x-1 \leq -2$

$x \geq 3, x \leq -1$

در دو عبارت صدق کرده

$x = -1 \Rightarrow 2 - b = a - 2$
 $a + b = 4$

$x = -2 \Rightarrow 1 - b = a - 3$
 $a + b = 4$

$\sqrt{a-b} = b \Rightarrow a = 2b^2$

$-x^2 - bx + a$

$\sqrt{a-2b} = b \Rightarrow \sqrt{2b^2 - 2b} = b$

$a = 2b^2 = -2b \Rightarrow 2b = -2$

$\Rightarrow -1 = b$

$b = -1, a = 2$

$a + b = 1$

$x = 2 \Rightarrow fa + 2b + c = 0$

$\frac{1}{2} + \frac{1}{2} = 1 \Rightarrow a = 0$

$\Rightarrow 2b = -c$

$x = 0 \Rightarrow \sqrt{c} = 0$

$c > 0$

$b < 0$ (1)

$3(0) + (-2b) - 3|b| = b$

$|b| = -b$

$$\text{الف) } |x| - [20] > 0 \Rightarrow 0, x^+ \notin D \Rightarrow D = \mathbb{R} - (x^+ \cup \{0\}) \quad (6)$$

$$\text{ب) } \sqrt{y} = 9 - \sqrt{x} \rightarrow x \geq 0, 9 - \sqrt{x} \geq 0 \Rightarrow D = [0, 81]$$

$$\text{الف) } \log \frac{x^3 - 1}{x} \geq 0, \left. \begin{array}{l} x^3 - 1 > 0 \\ x > 0 \\ x \neq 1 \end{array} \right\} \Rightarrow \left(\frac{1}{4}, +\infty\right) - \{1\} \quad (1)$$



$$(1) \cap (2) = \left(\frac{2}{3}, +\infty\right) - \{1\}$$

$$x^3 - 1 \geq 1 \Rightarrow x \geq \frac{2}{3} \quad \left(\frac{2}{3}, +\infty\right) \quad (2)$$

~~$$(1) \cap (2) = \left(\frac{2}{3}, +\infty\right) - \{1\} \Rightarrow D = \mathbb{R} - \{1\}$$~~

$$9) \quad \hookrightarrow \quad 9 + \sqrt{|x|} - |x| \geq 0 \quad \rightarrow \quad x = \pm 9.$$

$$\begin{array}{c} -9 \quad 9 \\ \hline - \mid + \mid - \end{array} \quad R = (-9, 9)$$

$$a+b \neq 0 \Rightarrow x = -b$$

$$y \neq -b \Rightarrow b \neq -y \Rightarrow R - \{-y\}$$

$$x^2 - 1; \Delta \leq x < \Delta, +\infty) \rightarrow y = \sqrt{x} \quad D = R$$

$$x^2 + 4; x \in (-\infty, \Delta) \rightarrow y = \sqrt{x^2 + 4} \quad x^2 + 4 > 0 \Rightarrow x \in \mathbb{R}$$

$$D = \left[-\frac{4}{x^2}, +\infty\right)$$

$$x^2 + 4x + 1 \neq 0 \rightarrow \text{ریشه مضاعف} \quad D = R - \left\{-\frac{1}{x}\right\}$$

$$\frac{1}{x} = x$$

$$1 - \log(x-2) \geq 0 \Rightarrow \log(x-2) \leq 1 \Rightarrow x-2 \leq 10 \quad (1)$$

$$\frac{b^0}{\log} \rightarrow x-2 > 0 \quad (2)$$

$$(1) \cap (2) \Rightarrow 0 < x-2 \leq 10$$

$$0 + \frac{a}{x} < x < a + \frac{a}{x}$$

$$\left(a + \frac{a}{x}\right) - \left(0 + \frac{a}{x}\right) = a$$