

14, 25

Year. Month. Date. ()

امید منیر خواتون یازدهم A کتب

الف) $y = \frac{x+3}{x^3+x^2-11x+3}$ ①

$x^3+x^2-11x+3 \rightarrow x^3+x^2-11x+3$ $P_{n^3+n^2-11n+3} \neq 0$

$\rightarrow x^3+x^2-11x+3 = (x+3)(x-1)(x-\frac{1}{3})$ بر $n-1$ بخشیدیم

$\rightarrow \frac{(x+3)(x-1)(x-\frac{1}{3})}{(x+3)(x-1)(x-\frac{1}{3})}$ تقسیم حالت

$\rightarrow \frac{1}{x-\frac{1}{3}} = \frac{1}{x} + \frac{1}{3x} + \frac{1}{3x^2}$ برای تقسیم کسری

$\Rightarrow \boxed{D_f = IR - \{-3, -\frac{1}{3}, \frac{1}{3}\}}$ ✓

ب) $y = \frac{x+3}{x^3+4x^2+10x+3}$ ②

$x^3+4x^2+10x+3 \rightarrow x^3+4x^2+10x+3$ بر $n+1$ بخشیدیم

$\rightarrow x^3+4x^2+10x+3 = (x+3)(x+1)(x+\frac{1}{3})$ تقسیم حالت

$\rightarrow \frac{(x+3)(x+1)(x+\frac{1}{3})}{(x+3)(x+1)(x+\frac{1}{3})}$ تقسیم حالت

$\Rightarrow \boxed{D_f = IR - \{-3, -1, -\frac{1}{3}\}}$ ✓

الف) $y = \frac{x+3}{x^3-2x^2+2x-1}$ ③

$x^3-2x^2+2x-1 \rightarrow x^3-2x^2+2x-1$ بر $n-1$ بخشیدیم

$\rightarrow x^3-2x^2+2x-1 = (x-1)(x-1)(x-1)$ تقسیم حالت

$\Rightarrow \boxed{D_f = IR - \{1\}}$ ✓

ب) $y = \sqrt{\frac{x+3}{x^3-2x^2+2x-1}}$ ④

$\Rightarrow \frac{x+3}{x^3-2x^2+2x-1} \rightarrow \frac{x+3}{(x-1)(x-1)(x-1)}$ تقسیم حالت

$\Rightarrow \boxed{D_f = (-\infty, -3] \cup (+1, +\infty)}$ ✓

الف) $y = \frac{x}{x^3-2x^2+2x-1}$ ⑤

$x^3-2x^2+2x-1 \rightarrow x^3-2x^2+2x-1$ بر $n-1$ بخشیدیم

$\rightarrow x^3-2x^2+2x-1 = (x-1)(x-1)(x-1)$ تقسیم حالت

$\Rightarrow \boxed{D_f = IR - \{-3, 0, 1, 2\}}$ ✓

الف) $y = \frac{n+3}{|2n+1| - |n+3|} \rightarrow |2n+1| - |n+3| \neq 0 \Rightarrow |2n+1| = |n+3|$ (۲) (۴)

$\Rightarrow (2n+1)^2 = (n+3)^2 \Rightarrow 4n^2 + 4n + 1 = n^2 + 6n + 9 \Rightarrow 3n^2 - 2n - 8 = 0$

$\Rightarrow n = \frac{2 \pm \sqrt{4 + 96}}{6} = \frac{2 \pm 10}{6} \Rightarrow D_f = \mathbb{R} - \left\{ -\frac{4}{3}, 2 \right\}$ ✓

ب) $y = \sqrt{|2n+1| - |n+3|} \rightarrow |2n+1| - |n+3| \geq 0 \Rightarrow |2n+1| \geq |n+3|$

$\Rightarrow 4n^2 + 4n + 1 \geq n^2 + 6n + 9 \Rightarrow 3n^2 - 2n - 8 \geq 0 \Rightarrow \frac{-2}{3} \leq n \leq 2$

$\Rightarrow D_f = (-\infty, -\frac{2}{3}] \cup [2, +\infty)$ ✓

الف) $y = \log_p \left(\frac{n+3}{2} \right) \rightarrow 1 - \log_p \frac{n+3}{2} > 0 \Rightarrow \log_p \frac{n+3}{2} < 1 \Rightarrow \frac{n+3}{2} < p \Rightarrow n < 2p - 3$ (۱, ۵) (۵)

ب) $y = \log_p \left(\frac{n+3}{2} \right) \rightarrow 1 - \log_p \frac{n+3}{2} > 0 \Rightarrow \log_p \frac{n+3}{2} < 1 \Rightarrow \frac{n+3}{2} < p \Rightarrow n < \frac{2}{p} - 3$ ✓

$$f(x) = \sqrt{\log \log \frac{(x-1)}{0.5}} \rightarrow \log \log \frac{(x-1)}{0.5} \geq 0$$

(I) $x-1 > 0 \Rightarrow x > 1$ (II) $\log \frac{(x-1)}{0.5} > 0 \Rightarrow x-1 > 0.5 \Rightarrow x > 1.5$

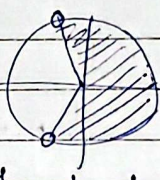
(III) $\log \log \frac{(x-1)}{0.5} \geq 0 \Rightarrow \log \frac{(x-1)}{0.5} \geq 1 \Rightarrow x-1 \geq 0.5 \Rightarrow x \geq 1.5$

تکلیف قبل طم این بود: $0.5 < \frac{1}{2} < 1$
 جبهه نفاذ را قطع می کند! $\Rightarrow D_f = \{x, x \geq 1.5\}$

(V) $y = \log(2 \cos n + 1) \rightarrow 2 \cos n + 1 > 0 \Rightarrow 2 \cos n > -1 \Rightarrow \cos n > -\frac{1}{2}$

باید هر نویسه این معادله

$\Rightarrow D_f = \{x \mid \frac{2\pi}{3} < x < \frac{4\pi}{3}\}$



$(\frac{2\pi}{3}, \frac{4\pi}{3})$

(ب) $y = \sqrt{\log \frac{n-1}{n+1}} \Rightarrow \log \frac{n-1}{n+1} \geq 0 \Rightarrow \frac{n-1}{n+1} \geq 1 \Rightarrow \frac{n-1-n-1}{n+1} \geq 0$

$\Rightarrow \frac{-2}{n+1} \geq 0 \Rightarrow \frac{-1}{\frac{n+1}{2}} \geq 0 \Rightarrow D_f = (-\infty, -1)$

(A) $f(x) = \sqrt{(a+x)n^2 + a + b} \Rightarrow (a+x)n^2 + a + b \geq 0 \Rightarrow D_f = (-\infty, \infty)$

دو طرف ریشه مضاعف درجه اول تعیین علامت می کند است
 و این اتفاق می افتد پس این یک تابع خطی بود
 $a = -2, b = 4$
 $\Rightarrow b = -12a - 18 \Rightarrow 4 = -12(-2) - 18 \Rightarrow 4 = 24 - 18 \Rightarrow 4 = 6$

$\Rightarrow a = \frac{-12}{\sqrt{2}} \Rightarrow b = \frac{-12}{\sqrt{2}} - 18 = (-12)(\frac{-1}{\sqrt{2}}) - 18 \Rightarrow b = \frac{12}{\sqrt{2}}$

(9)

(2)

$$f(m) = \sqrt{m^2 + 2m + 2 - m^2} \quad \text{و } D_f = (-\infty, +\infty) = \mathbb{R}$$

$$m^2 + 2m + 2 - m^2 \rightarrow \text{مقدار تحت رادیکال باید مثبت باشد} \Rightarrow \Delta \leq 0$$

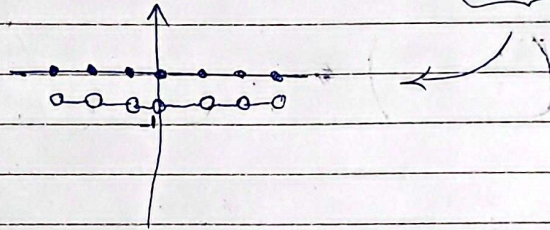
$$\Rightarrow \Delta \leq 0 \quad \Delta = b^2 - 4ac \Rightarrow (2)^2 - 4(1)(2 - m^2) \leq 0 \Rightarrow 4 - 8 + 4m^2 \leq 0 \Rightarrow 4m^2 - 4 \leq 0$$

$$\Rightarrow 4(m^2 - 1) \leq 0 \Rightarrow m^2 - 1 \leq 0 \Rightarrow (m+1)(m-1) \leq 0 \Rightarrow \begin{matrix} -1 & +1 \\ + & - & + \end{matrix}$$

$$\Rightarrow m \in (-1, +1) \rightarrow m_{\max} - m_{\min} = 1 - (-1) = 2 \quad \checkmark$$

$$f(m) = \sqrt{4 - m^2} \rightarrow 4 - m^2 \geq 0 \Rightarrow 4 \geq m^2 \Rightarrow m^2 \leq 4 \Rightarrow \boxed{-2 \leq m \leq 2}$$

$$\{m\} + \{-m\} + 1 \rightarrow \{m\} + \{-m\} + 1 \neq 0 \Rightarrow \{m\} + \{-m\} \neq -1$$



$$\rightarrow \text{مقدارهای مجاز برای } m = \{-2, -1, 0, 1, 2\} \quad \checkmark$$