

نام و نام خانوادگی پاسبان کلاس پاسنامه تشریحی تکلیف شماره ۳

الف) $4x^3 - 20x^2 + 25x - 15 \neq 0$, $x=1$, $\frac{4x^3 - 20x^2 + 25x - 15}{x-1} = 4x^2 - 16x + 15$
 $x=1$, $x=\frac{3}{4}$, $x=\frac{5}{4}$ $D_f = R \setminus [1, \frac{3}{4}, \frac{5}{4}]$ معادله درجه ۲ حل می‌شود

ب) $3x^3 - x^2 - 18x - 12 \neq 0$, $x=2$, $\frac{3x^3 - x^2 - 18x - 12}{x-2} = 3x^2 + x + 4$
 $x=2$, $x=-1$, $x=-\frac{4}{3}$ $D_f = R \setminus [2, -1, -\frac{4}{3}]$ معادله درجه ۲ حل می‌شود

الف) $3-2x \geq 0$, $-2x \geq 3 \Rightarrow x \leq -\frac{3}{2}$, $x^2 \neq 3-2x \Rightarrow x^2+2x-3 \neq 0$
 $(x+3)(x-1) \neq 0$, $x \neq -3$, $x \neq 1$ $D_f = (-\infty, -\frac{3}{2}] \setminus [-3, 1]$
 ب) $3x-2 \geq 0$, $3x \geq 2 \Rightarrow x \geq \frac{2}{3}$, $x^2 \neq 3x-2 \Rightarrow x^2-3x+2 \neq 0$
 $(x-1)(x-2) \neq 0$, $x \neq 1$, $x \neq 2$ $D_f = [\frac{2}{3}, 1) \cup (2, +\infty)$

الف) $2\cos x - 1 \neq 0$, $\cos x \neq \frac{1}{2} \Rightarrow \cos x = \frac{1}{2}$
 $D_f = R \setminus [\frac{\pi}{3} + 2k\pi, -\frac{\pi}{3} + 2k\pi | k \in \mathbb{Z}]$
 ب) $2\sin x + 1 \neq 0 \Rightarrow \sin x \neq -\frac{1}{2} \Rightarrow \sin x = -\frac{1}{2}$
 $D_f = R \setminus [-\frac{\pi}{6} + 2k\pi, \frac{7\pi}{6} + 2k\pi | k \in \mathbb{Z}]$
 ج) $\cot x - 1 \neq 0 \Rightarrow \cot x \neq 1$, $\tan x \neq 1 \Rightarrow \cot x = \frac{1}{\tan x}$
 $D_f = R \setminus [k\pi, \frac{\pi}{4} + k\pi, \frac{5\pi}{4} + k\pi | k \in \mathbb{Z}]$
 د) $4\sin^2 x - 3 \neq 0 \Rightarrow \sin^2 x \neq \frac{3}{4}$, $\sin x \neq \pm \frac{\sqrt{3}}{2}$ در آن صورت

الف) $x=2$ و x^3 $\frac{1}{x-2} = \frac{1}{x-2}$ $D_f = R \setminus [2, 3]$
 ب) $x=1$ و $x \in \mathbb{Q}$ $\frac{1}{x-1} = \frac{1}{x-1}$ $D_f = R \setminus [1, \infty]$
 ج) $x=-1$, $x=\infty$ $\frac{1}{x+1} = \frac{1}{x+1}$ $D_f = R \setminus [-1, -\infty] \cup (-\infty, -1)$
 د) $x=1$, $x=2$ $\frac{1}{x-1} = \frac{1}{x-1}$ $D_f = R \setminus [1, 2]$

الف) $x=\infty$ $D_f = R \setminus [\infty]$
 ب) $x=1$ $x=\infty \Rightarrow D_f = [1, +\infty] \cup [\infty]$
 $\frac{1}{x-1} = \frac{1}{x-1}$ $\frac{1}{x-1} = \frac{1}{x-1}$

$D_f = R \setminus [\frac{\pi}{3} + 2k\pi, \frac{2\pi}{3} + 2k\pi, -\frac{\pi}{3} + 2k\pi, \frac{4\pi}{3} + 2k\pi | k \in \mathbb{Z}]$

الف) $\frac{(x-1)(x-3)}{(x-1)(x^2+x+1)} \Rightarrow x-3 \geq 0 \Rightarrow x \geq 3 \quad D_f = [3, +\infty)$

ب) $x^2 - 1 \neq 0 \Rightarrow x \neq 1, x \neq -1 \quad D = \mathbb{R} \setminus [-1, 1]$

٢

الف) $x^3 - 3x > 0 \Rightarrow x(x-3) > 0 \Rightarrow x = 0 \text{ و } x = 3 \quad D_f = (-\infty, 0) \cup$

ب) $12 - x^2 \geq 0 \Rightarrow -x^2 \geq -12 \Rightarrow \wedge, -1 \quad |x| - 2 \geq 0 \Rightarrow x = 2$

$D_f = [1, 3] \cup (3, +\infty) \quad (-5, -2) \cup (2, 5) - \{\pm 3\} \Rightarrow x = 2$

ج) $(1, 4) - \{4\}$

$\Rightarrow (2, 4] - \{1\}$

$x(x+1) = 0$

$x = 0, x = -1$

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

$D = \mathbb{R} \setminus [-1, 0]$

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

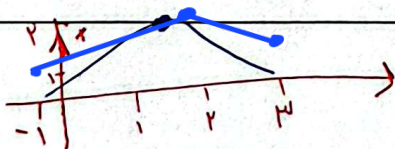
$2 < x \leq 3 \quad \frac{x-f(x)}{f(x)} > 0 \quad \checkmark$

$-2 < x \leq -1 \quad \frac{x-f(x)}{f(x)} > 0 \quad \checkmark$

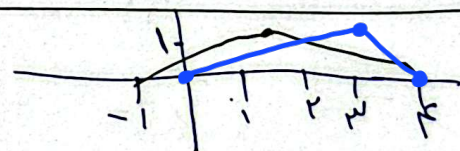
$D_f = (2, 3] \cup (-2, -1]$

٢

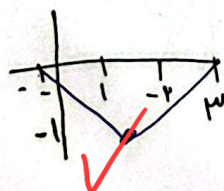
الف)



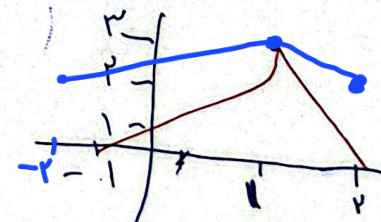
ب)



ج)



د)



١٠