

الف) $\begin{cases} y_1'' = 2x^2 + x \\ y_2'' = 2x^2 + x \end{cases} \rightarrow y_1'' = y_2'' \rightarrow y_1 = y_2$ صحیح ✓

ب) $|y| = 1 + 1^3 - 1 = 1 \rightarrow y = \pm 1$ صحیح ✗

ج) نقطه $x=0$ صحیح ✓

د) $x = \cos y$ $x=0 \rightarrow y = \pi, 3\pi$ صحیح ✗

الف) $\rightarrow D_f = \mathbb{R} - \{0\} \cup \{4\} \rightarrow \mathbb{R} - \{0, 4\}$

ب) $x^2 - 5x + 4 = 0 \rightarrow (x-4)^2 = -1$ ✗ $D_f = \mathbb{R}$

ج) $D_f = \mathbb{R}$

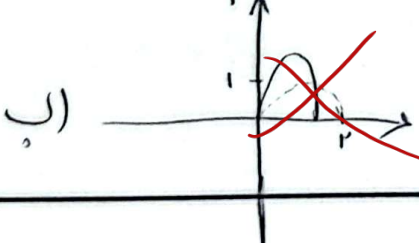
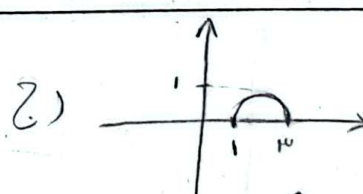
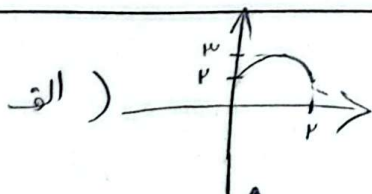
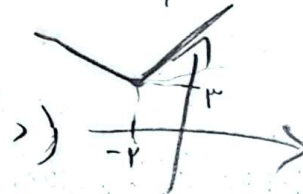
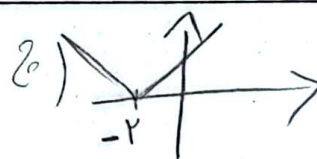
د) $x^2 - 4x = 0$ $x^2(x-4) = 0$ $x=0$ $x=4$ $D_f = \mathbb{R} - \{-2, 0, 2\}$

الف) $x < 4$ $x > 2 \rightarrow 2 < x < 4$ $D_f = [2, 4]$

ب) $\rightarrow D_f = \mathbb{R}$

ج) $x \neq 4$ $x \geq 2$ $D_f = [2, +\infty) - \{4\}$

د) ~~$D_f = \mathbb{R}$~~



1, 0, 6

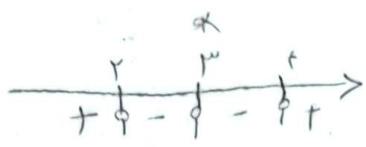
2, 0, 0

الف) $x=2, x=1, x=1$



6

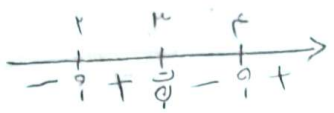
بـ)



$(-\infty, 1] \cup \{2\} \cup [2, +\infty)$

✓

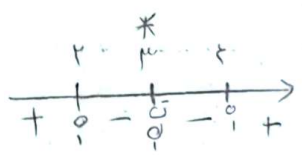
الف)



$[1, 2] \cup [2, +\infty)$

✓

بـ)

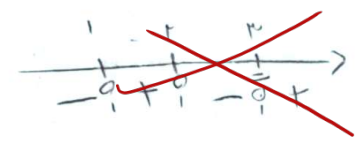


$(-\infty, 1] \cup [2, +\infty)$

7

الف)

$(x-1)(x-2)=0$
 $x=1, x=2$



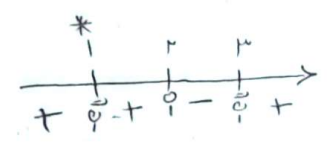
$[1, 2] \cup (2, +\infty)$

✓

8

بـ)

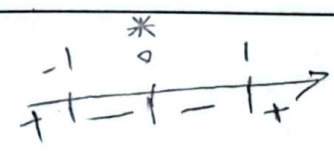
$(x-1)(x-2)=0$
 $(x-1)(x-3)=0$



$(-\infty, 1) \cup (1, 2] \cup (3, +\infty)$

الف)

$x^2(x^2-1)=x^2(x-1)(x+1)$



✓

بـ)

$(x+1)(x+2)=-2$
 $(x+1)$

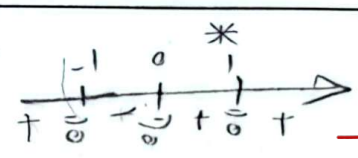
$\times \mathbb{R} \checkmark$

9

$x \neq 1$

$x \neq 0$
 $x \neq -1$

$\frac{x^2-1}{x^2-x} \geq 0 \Rightarrow x^2-1 \geq 0$



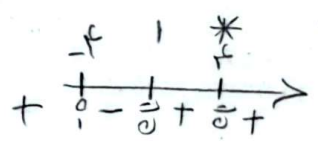
✓

الف) $\mathbb{R} - [-1, 0] \cup \{1\}$

10

بـ)

$\frac{(x+1)(x-1)}{(x-1)(x-1)}$



$(-\infty, -1] \cup (1, 1) \cup (1, +\infty)$