

الف $y_1' = x_1^2 + x_1$ $y_2' = x_1^2 + x_2$ $\Rightarrow y_1' = y_2' \Rightarrow y_1 = y_2$ ✓

ب if $x=1 \Rightarrow y = \pm 3$ X

ج $\text{مجموع مشتقات} = 0 \Rightarrow \text{مشتق} = 0 \Rightarrow x = \pm 2$ $y = 2$ ✓

د if $x=0 \Rightarrow y = \pm \sqrt{0} = 0$ X

الف $x^2 - 4x = 0 \Rightarrow x^2 = 4x \Rightarrow x = 4 \Rightarrow D_f = \mathbb{R} - \{4\}$

* ب $D_f = \mathbb{R}$ $\Rightarrow$ دایره مماس منحنی است پس مشتق ندارد

* ج $D_f = \mathbb{R}$ $\Rightarrow$ دایره مماس منحنی است پس مشتق ندارد

د $x^4 - 4x^2 = 0 \Rightarrow x^2(x^2 - 4) = 0 \Rightarrow x^2(x-2)(x+2) = 0$

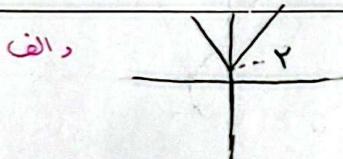
$\Rightarrow D_f = \mathbb{R} - \{0, -2, 2\}$

الف $4-x \geq 0 \Rightarrow x \leq 4$ $\cup$ $x-2 \geq 0 \Rightarrow x \geq 2 \Rightarrow D_f = [2, 4]$

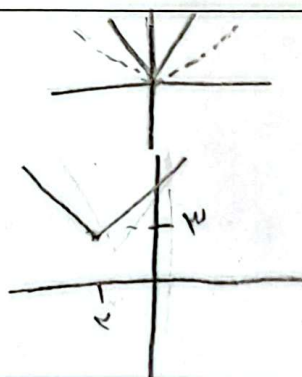
ب $x^2 + 1 = 0 \Rightarrow x^2 = -1 \Rightarrow D_f = \mathbb{R}$

ج $x-4=0 \Rightarrow x=4$, $x-2 \geq 0 \Rightarrow x \geq 2 \Rightarrow D_f = [2, +\infty) - \{4\}$

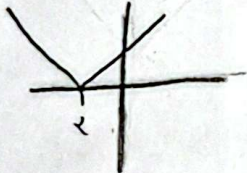
د $|x| + x^2 = 0 \Rightarrow |x| = -x^2 \Rightarrow D_f = \mathbb{R}$



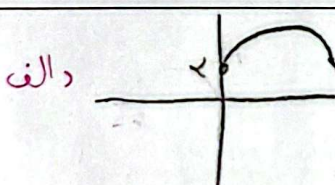
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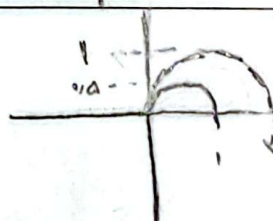
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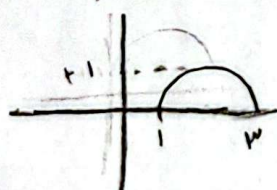
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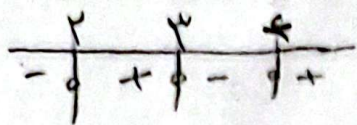
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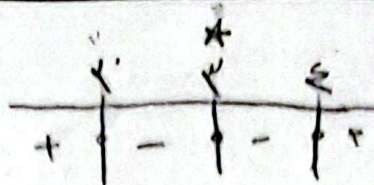
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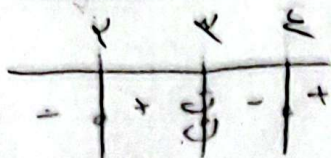
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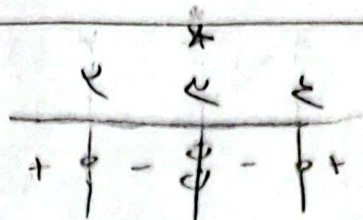
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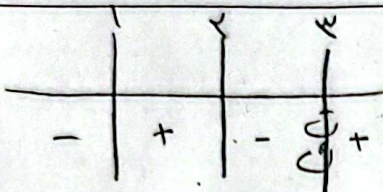
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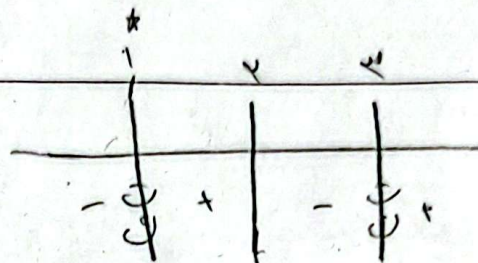
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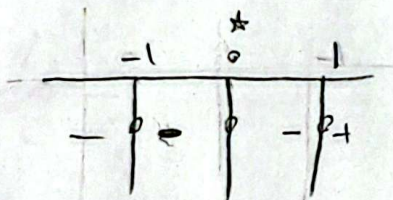
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$$\frac{x^2 - 1}{x^2 - 1} = 1 \Rightarrow x < 1$$

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

الف



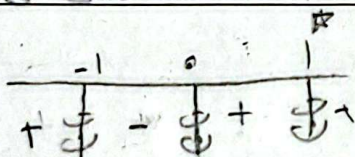
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در هر دو صورت مثبت

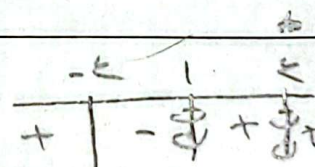
$$\frac{x^2(x^2 - 1)}{(x^2 - 1)} \leq 1$$

$$\frac{\text{دشمن منفی}}{\text{دشمن منفی}}$$

الف



ب



$$\frac{x^2 - 1}{x^2 - 1} = 1 \Rightarrow x < 1$$

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

$$(1, 4) \cup (4, +\infty) \cup (-\infty, -4] \cup (-4, -1)$$

$$(0, 1) \cup (1, +\infty)$$

$$\frac{x^2 - 1}{(x-1)(x+1)} \leq -1$$

$$\leq +1$$