نام و نام خانوادگی .....محمد سعیدی..... پاسخنامه تشریحی تکلیف شماره ۳ کلاس ...دهم تجربی A.....

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الف) $y^3 - x = 2x^2 \Rightarrow \begin{cases} y_1^3 = 2x^2 + x \\ y_2^3 = 2x^2 + x \end{cases} \rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ ✓

ب) $|y| + x^2 = x + 3 \xrightarrow{x=0} |y| = 3 \rightarrow y = \pm 3$ ✗

ج) $\sqrt{x-4} + |y-2| = 0 \rightsquigarrow \sqrt{x-4} = |y-2| = 0 \rightarrow x = 4, y = 2$ ✓ جمع ۲ مثبت صفر میشود که هرکدام صفر باشند

د) $x = \cos y \xrightarrow{x=0} 0 = \cos y \rightarrow y = 90, 270$ ✗

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الف) $y = \frac{x+4}{x^2-4x} = \frac{x+4}{x(x-4)} \rightsquigarrow x \neq 0, 4 \rightarrow D_f = \mathbb{R} - \{0, 4\} \Rightarrow D_f = (-\infty, 0) \cup [1, 3] \cup (4, +\infty)$

ب) $y = \frac{x+4}{x^2 - 7x + 14} \rightsquigarrow \Delta = b^2 - 4ac = 49 - 56 = -15 \rightsquigarrow \Delta < 0 \rightarrow D_f = \mathbb{R}$

ج) $y = \frac{x+4}{x^2+x+4}$ ($x^2+x+4 \rightarrow +$ همواره) $\rightsquigarrow \Delta = b^2 - 4ac = 1 - 16 = -15 \rightsquigarrow \Delta < 0 \rightarrow D_f = \mathbb{R}$

د) $y = \frac{x+4}{x^3 - 4x^2} \rightsquigarrow \frac{x+4}{x^2(x+2)(x-2)} \rightsquigarrow D_f = \mathbb{R} - \{0, 2, -2\} \Rightarrow D_f = (-\infty, -2) \cup (-2, 0) \cup (0, 2) \cup (2, +\infty)$

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الف) $y = \sqrt{4-x} + \sqrt{x-2} \rightsquigarrow 4 - x \geq 0 \rightarrow x \leq 4 \; , \; x - 2 \geq 0 \rightarrow x \geq 2 \Rightarrow 2 \leq x \leq 4 \rightarrow D = [2, 4]$

ب) $y = \frac{3x+1}{x^2+1} \rightsquigarrow D = \mathbb{R}$ ($x^2+1 \rightarrow +$ همواره) ★ مخرج همواره +

ج) $y = \frac{\sqrt{x-2}}{x-4} \rightsquigarrow x - 4 \neq 0 \rightarrow x \neq 4 \; , \; x - 2 \geq 0 \rightarrow x \geq 2 \Rightarrow D = [2, 4) \cup (4, +\infty)$

د) $y = \frac{2x+3}{|x|+x^2} \rightsquigarrow |x| + x^2 \neq 0 \rightsquigarrow x \neq 0 \Rightarrow D = \mathbb{R} - \{0\} \rightarrow D = (-\infty, 0) \cup (0, +\infty)$

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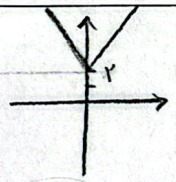
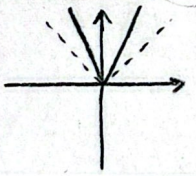
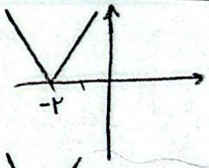
الف) $y = |x| + 2$



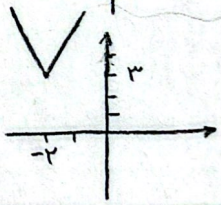
ب) $y = 2|x|$



ج) $y = |x + 2|$



د) $y = |x + 2| + 3$



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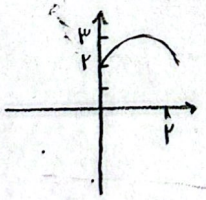
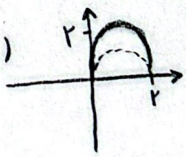
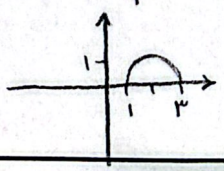
الف) $f(x) + 2$



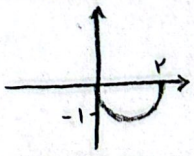
ب) $2f(x)$



ج) $f(x-1)$



د) $-f(x)$



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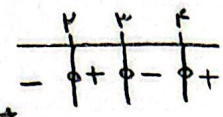
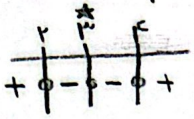
الف) $y=(x-2)(x-3)(x-4)$



ب) $y=(x-2)(x-3)^2(x-4)$

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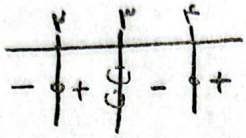
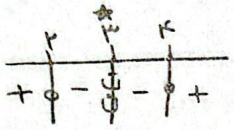
الف) $y=\dfrac{(x-2)(x-4)}{x-3}$



ب) $y=\dfrac{(x-2)(x-4)}{(x-3)^2}$



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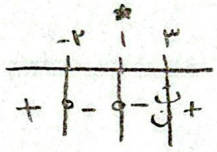
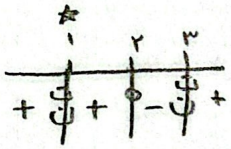
الف) $y=\dfrac{x^3-3x+2}{x-3}=\dfrac{(x-1)^2(x+2)}{x-3}$



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



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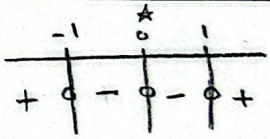
الف) $y=\dfrac{x^4-x^2}{x^2+x+2}=\dfrac{x^2(x+1)(x-1)}{x^2+x+2}$ ⟶ $x^2+x+2>0 \to \Delta<0$



ب) $y=\dfrac{x^2+3x+4}{x^2+2x+3}$ ⟶ $x^2+3x+4>0 \to \Delta<0 \Longrightarrow$ همواره + مثبت

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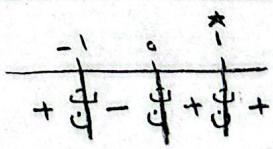
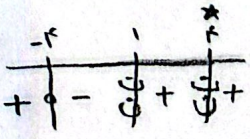
الف) $y=\sqrt{\dfrac{x^3-1}{x^3-x}}=\sqrt{\dfrac{x^3-1}{x(x+1)(x-1)}}$



$\hookrightarrow D=(-\infty,-1)\cup(0,1)\cup(1,+\infty)$

ب) $y=\sqrt{\dfrac{x^2-16}{x^2-5x+4}}=\sqrt{\dfrac{(x-4)(x+4)}{(x-1)(x-4)}}$



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