

نام و نام خانوادگی علی حسینیان پاسخنامه تشریحی تکلیف شماره ۵۳ کلاس پسر A

الف) تابع نیست $y^2 = 2x^2 + x \Rightarrow y = \pm \sqrt{2x^2 + x}$

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ب) $|y| = x + 2 - x^2 \Rightarrow y = \pm(x + 2 - x^2) \Rightarrow$ تابع است

ج) $\sqrt{x-4} = |y-2| = 0 \Rightarrow y-2=0$ و $x-4=0 \Rightarrow x=4$ و $y=2$

د) تابع است $\Rightarrow x=1 \rightarrow y=0, 3, 6, 9, 12, \dots$

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

ب) $x^2 - 7x + 12 = 0 \Rightarrow (x-3)(x-4) = 0 \Rightarrow x=3$ و $x=4 \Rightarrow D_f = \mathbb{R} - \{3, 4\}$

ج) $\Delta = 1 - 16 = -15 \Rightarrow \Delta < 0$ و $x^2 > 0 \Rightarrow x^2 + x + 4 > 0 \Rightarrow D_f = \mathbb{R}$

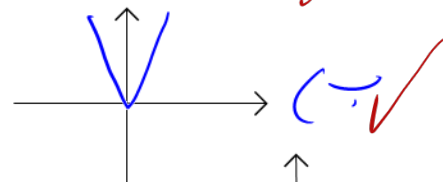
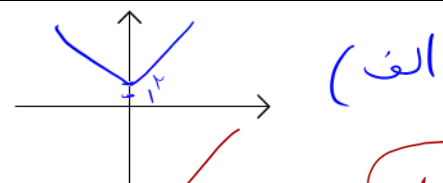
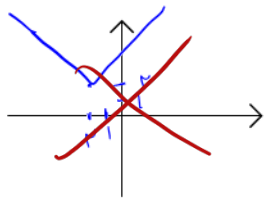
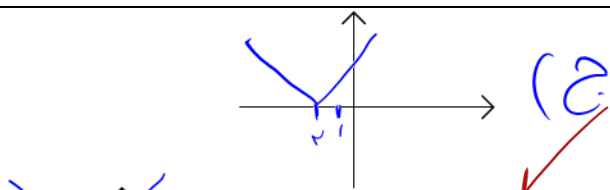
د) $x^3 - 9x^2 = 0 \Rightarrow x^2(x-9) = 0 \Rightarrow x=0$ و $x=9 \Rightarrow D_f = \mathbb{R} - \{0, 9\}$

الف) $x-4 \geq 0 \Rightarrow x \geq 4$ و $x-2 \geq 0 \Rightarrow x \geq 2 \Rightarrow D_f = [4, +\infty)$

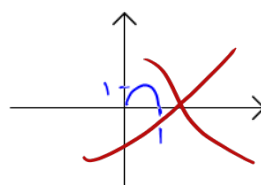
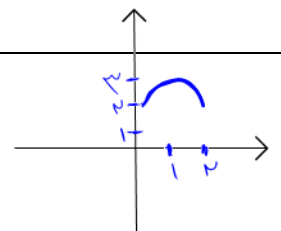
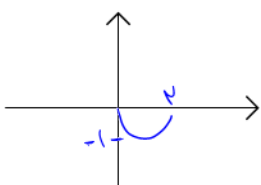
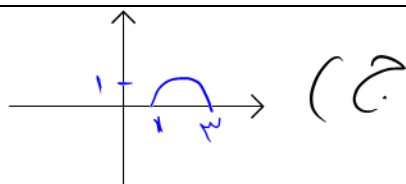
ب) $x^2 + 1 \rightarrow$ همیشه مثبت $\Rightarrow D_f = \mathbb{R}$

ج) $x-2 \geq 0 \Rightarrow x \geq 2$ و $x-4=0 \Rightarrow x=4 \Rightarrow D_f = [2, 4) \cup (4, +\infty)$

د) $x^2 + x \geq 0 \Rightarrow x(x+1) \geq 0 \Rightarrow D_f = (-\infty, -1] \cup [0, +\infty)$



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الف) $x^2 = 4, 3, 2$ $\frac{-1 \quad 2 \quad 3}{- \quad + \quad - \quad +}$ $(2, 3) \cup (3, +\infty) \oplus$ $(-\infty, 2) \cup (3, 4) \ominus$ $\{2, 3, 4\} \odot$ $\textcircled{2}$

ب) $x^2 = 4, 3, 2$ $\frac{2 \quad 3^* \quad 4}{+ \quad - \quad - \quad +}$ $(-\infty, 2) \cup (4, +\infty) \oplus$ $(2, 3) \cup (3, 4) \ominus$ $\{2, 3, 4\} \odot$

الف) $x^2 = 1, 2$ $\frac{-1 \quad 2 \quad 3}{- \quad + \quad - \quad +}$ $(1, 2) \cup (3, +\infty) \oplus$ $(-\infty, 1) \cup (2, 3) \ominus$ $\{1, 2\} \odot$ $\textcircled{2}$

ب) $x^2 = 2, 3$ $\frac{2 \quad 3^* \quad 4}{+ \quad - \quad - \quad +}$ $(-\infty, 2) \cup (4, +\infty) \oplus$ $(3, 4) \cup (2, 3) \ominus$ $\{2, 3\} \odot$

الف) $\frac{x^3 - 3x + 3}{x - 3} = \frac{(x-1)^2(x+2)}{x-3}$ $\frac{-2 \quad 1 \quad 3}{+ \quad - \quad - \quad +}$ $(-\infty, -2) \cup (3, +\infty) \oplus$ $(-2, 1) \cup (1, 3) \ominus$ $\{-2, 1\} \odot$ $\textcircled{2}$

ب) $\frac{x^3 - 3x + 2}{x^2 - 4x + 3} = \frac{(x-2)(x-1)}{(x-3)(x-1)}$ $\frac{1^* \quad 2 \quad 3}{+ \quad + \quad - \quad +}$ $(-\infty, 2) \cup (3, +\infty) \oplus$ $\{2\} \odot$ $(2, 3) \ominus$

الف) $\frac{x^4 - x^2}{x^2 + x + 2} = \frac{x^2(x-1)(x+1)}{x^2 + x + 2}$ $\frac{-1 \quad 0^* \quad 1}{+ \quad - \quad - \quad +}$ $(-\infty, -1) \cup (1, +\infty) \oplus$ $(-1, 0) \cup (0, 1) \ominus$ $\{-1, 0, 1\} \odot$

ب) $\frac{x^2 + 2x + 4}{x^2 + 2x + 3} \rightarrow$ $\Rightarrow$ هر دو ریشه ندارند $\mathbb{R} \oplus$ $\textcircled{2}$

الف) $\frac{x^3 - 1}{x^3 - x} \geq 0 \rightarrow \frac{(x-1)(x^2 + x + 1)}{(x(x-1)(x+1))} \geq 0 \rightarrow \frac{x^2 + x + 1}{x(x+1)} \geq 0$ ریشه ندارند $D_f = (-\infty, -1) \cup (1, 0) \cup (0, +\infty)$ جدول تعیین علامت؟ $\textcircled{11, 12}$

ب) $\frac{x^3 - 16}{x^3 - 2x + 4} \geq 0 \rightarrow \frac{(x-4)(x+4)}{(x-1)(x-4)} \geq 0$ $\frac{-4 \quad 1 \quad 4^*}{+ \quad - \quad - \quad +}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$