

۱۷, ۲۵

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره کلاس: تاریخ:

الف) $x^2 - x = 2x^2$ $\begin{cases} x^2 = 2x^2 + x \\ x^2 = 2x^2 + x \end{cases} \rightarrow x^2 = x^2 \rightarrow x_1 = x_2$ تابع است

ب) $x^2 + x = x + 2$ $\begin{cases} x^2 = x + 2 - x \\ x^2 = 2 - x \end{cases} \rightarrow x_1 = x_2 \rightarrow x_1 = x_2$ تابع نیست

ج) $\sqrt{x+1} + x - 2 = 0 \rightarrow$ تابع است $\rightarrow$ تمس $\rightarrow$ ۲ نقطه تماس $\rightarrow$ تابع است

د) $x = \cos x$ $\rightarrow$ تابع نیست $\rightarrow$ قدری از روی گراف

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الف) $x^2 - x - x(x-3) \neq 0 \rightarrow x \neq (0, 3) \rightarrow D_f = R - \{0, 3\}$ ✓

ب) $\Delta = 1 - (4 \times 1 \times 4) = -15 \rightarrow D = R$ ✓

ج) $\Delta = 1 - (4 \times 1 \times 4) = -15 \rightarrow D = R$ ✓

د) $x^2 - 2x = x(x-2) \rightarrow x \neq \{0, 2\} \rightarrow D_f = R - \{0, 2\}$ ✓

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الف) $\sqrt{x} - x$ $9 - x \geq 0 \rightarrow x \leq 9 \rightarrow 1 \leq x \leq 9$ ✓

ب) $\sqrt{x+1}$ $x-1 \geq 0 \rightarrow x \geq 1 \rightarrow D_f = [1, 4]$ ✓

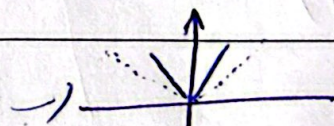
ج) $x^2 + 1 \rightarrow x^2 + 1 \geq 1$ $\rightarrow$ $D = R$ ✓

د) $x-2 \geq 0 \rightarrow x \geq 2$ $/ x-4 \neq 0 \rightarrow x \neq 4$ $\rightarrow D_f = x \geq 2 - \{4\}$ ✓

ه) $x^2 - 2x + 1 = (x-1)^2 \geq 0$ $\rightarrow D_f = R - \{0\}$ ✓

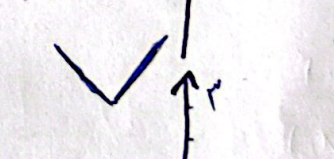
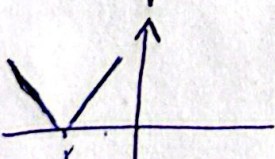
جواب ه است

الف)

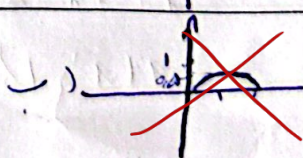
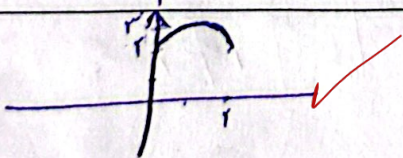


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ب)

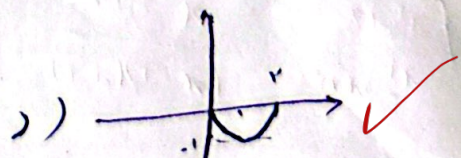
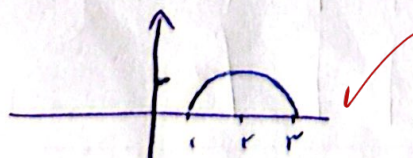


ج)



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د)



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$$الف) \begin{cases} x=2 \\ x=3 \\ x=4 \end{cases}$$

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & - & + & - & + \end{array}$$

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$$ب) \begin{cases} x=2 \\ x=3, n=5 \\ x=4 \end{cases}$$

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

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5

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$$الف) \begin{cases} x=2 \\ x=3 \\ x=4 \end{cases}$$

$$\Rightarrow \begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

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

$$x^2 - 2x + 1 \Rightarrow (x-1)^2$$

$$(x-1)(x+1)$$

$$ب) x^2 - 2x + 1 \Rightarrow (x-1)(x-2)$$

$$x^2 - 2x + 1 \Rightarrow (x-1)(x-2)$$

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

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$$الف) x^2(x^2-1) \rightarrow 0$$

$$x^2 + x + 1 \rightarrow \text{مربع كامل}$$

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

1

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

$$+$$

$$الف) x = \frac{\sqrt{x^2-1}}{x^2-x}$$

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

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & - & + & + & + \end{array}$$

1

$$ب) \sqrt{\frac{x^2-1}{x^2-x+1}}$$

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

$$\begin{array}{c|ccc} x & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$