

الف) $x^2 - x = 2x^2$ $\Rightarrow x^2 = 2x^2 + x$ $\Rightarrow x^2 = x^2 + x$ $\Rightarrow x = x + x$ $\Rightarrow x = 2x$ $\Rightarrow x = 0$ یا $x = 2$ $\Rightarrow D = \{0, 2\}$

ب) $x^2 + x = x + 2$ $\Rightarrow x^2 = 2$ $\Rightarrow x = \pm\sqrt{2}$ $\Rightarrow D = \{-\sqrt{2}, \sqrt{2}\}$

ج) $\sqrt{x+1} + x - 2 = 0$ $\Rightarrow \sqrt{x+1} = 2-x$ $\Rightarrow x+1 = (2-x)^2$ $\Rightarrow x+1 = 4-4x+x^2$ $\Rightarrow x^2-5x+3=0$ $\Rightarrow D = \left\{\frac{5 \pm \sqrt{13}}{2}\right\}$

د) $x = 0$ یا $x = 2$ $\Rightarrow D = \{0, 2\}$

الف) $x^2 - x = x(x-1) \neq 0 \Rightarrow x \neq 0, 1 \Rightarrow D = R - \{0, 1\}$

ب) $\Delta = 1 - (4 \times 1 \times 1) = -3 \Rightarrow D = R$

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

د) $x^2 - 2x = x(x-2) \Rightarrow x \neq 0, 2 \Rightarrow D = R - \{0, 2\}$

الف) $\sqrt{x} - x \geq 0 \Rightarrow \sqrt{x} \geq x \Rightarrow 1 \leq x \leq 4$

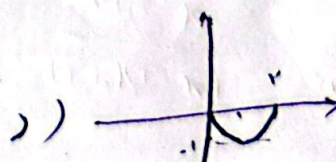
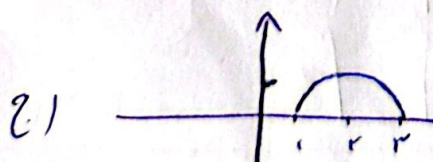
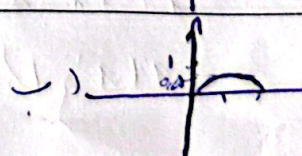
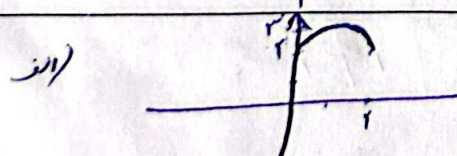
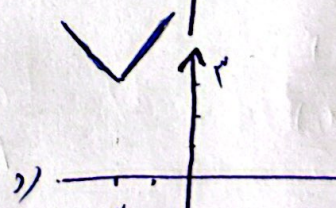
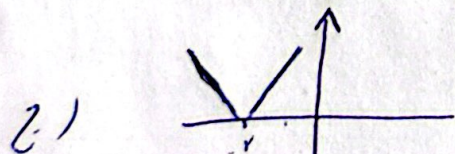
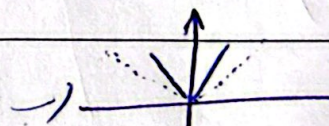
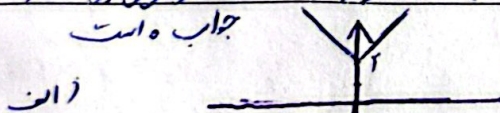
ب) $\sqrt{x} - x \geq 0 \Rightarrow \sqrt{x} \geq x \Rightarrow x \geq 1$ $\Rightarrow D = [1, 4]$

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

د) $x - 2 \geq 0 \Rightarrow x \geq 2$ $\Rightarrow D = [2, \infty)$

ه) $x - 4 \neq 0 \Rightarrow x \neq 4$ $\Rightarrow D = R - \{4\}$

و) $x^2 - 2x \geq 0 \Rightarrow x(x-2) \geq 0 \Rightarrow x \leq 0$ یا $x \geq 2$ $\Rightarrow D = (-\infty, 0] \cup [2, \infty)$



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

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

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

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

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

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

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

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

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

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

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

$$الف) x^2(x^2-1) \rightarrow 0,1$$

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

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

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

$$+$$

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

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

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

$$ب) \sqrt{\frac{x^2-1}{x^2-x}}$$

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

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