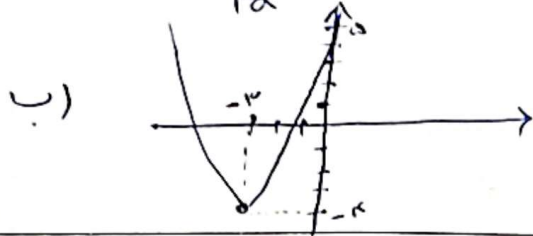


$\text{ext} \left| \begin{array}{l} -\frac{b}{2a} \\ c \end{array} \right\}, \frac{-\Delta}{2a}$
 $\min \left| \begin{array}{l} -\frac{c}{a} \\ 9 - 18 + 5 = -4 \end{array} \right|$ (الف)



$\max \left| \begin{array}{l} -\frac{c}{a} = 2 \\ -(-2) - 3 = 1 \end{array} \right|$

(الف)

$-x^2 + 4x - 3 = 0 \rightarrow a + b + c = 0 \rightarrow \frac{c}{a} = \frac{-3}{-1} = 3$

الف) $\Delta > 0$ $\Delta = b^2 - 4ac$ $\Delta = 9 - 18a$ $9 - 18a > 0$ $9 > 18a$ $a < \frac{9}{18} = \frac{1}{2}$
 ب) $\Delta = 0$ $9 - 18a = 0$ $a = \frac{9}{18} = \frac{1}{2}$
 ج) $\Delta < 0$ $9 - 18a < 0$ $9 < 18a$ $a > \frac{9}{18} = \frac{1}{2}$
 د) $\Delta \geq 0$ $9 - 18a \geq 0$ $9 \geq 18a$ $a \leq \frac{9}{18} = \frac{1}{2}$

الف) $x^2 - 2x + 1 = 2$ $(x-1)^2 = 2$ $x-1 = \sqrt{2}$ $x = 1 + \sqrt{2}$
 $x-1 = -\sqrt{2}$ $x = 1 - \sqrt{2}$
 ب) $x^2 - x + \frac{1}{4} = \frac{5}{4}$ $(x - \frac{1}{2})^2 = \frac{5}{4}$ $x - \frac{1}{2} = \frac{\sqrt{5}}{2}$ $x = \frac{1 + \sqrt{5}}{2}$
 $x - \frac{1}{2} = -\frac{\sqrt{5}}{2}$ $x = \frac{1 - \sqrt{5}}{2}$

$\Delta = b^2 - 4ac$ $x = \frac{-b \pm \sqrt{\Delta}}{2a}$
 الف) $4 + 4 = 8 \rightarrow \Delta$ $x = \frac{2 \pm \sqrt{8}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2}$
 ب) $\Delta = 1 + 16 = 17$ $x = \frac{-1 \pm \sqrt{17}}{2}$

$$\text{الف) } (x-7)(x-4) = 0 \quad x < \begin{matrix} 4 \\ 7 \end{matrix}$$

$$\text{ب) } (x+7)(x-4) = 0 \quad x < \begin{matrix} 4 \\ -7 \end{matrix}$$

$$\text{الف) } x^2 - 12x + 35 = 0 \quad (x-7)(x-5) = 0 \quad x < \begin{matrix} 5 \\ 7 \end{matrix}$$

$$\text{ب) } x^2 - 10x + 21 = 0 \quad (x-7)(x-3) = 0 \quad x < \begin{matrix} 3 \\ 7 \end{matrix}$$

$$\text{الف) } a+b+c=0 \quad \begin{matrix} 1 \\ \frac{c}{a} = \frac{3}{2} \end{matrix} = \boxed{1/5}$$

$$\text{ب) } a+c=b \quad \begin{matrix} -1 \\ \frac{-c}{a} = -\frac{3}{2} = -1/5 \end{matrix}$$

$$\text{ج) } \Delta = 25 - 16 = 9 \quad x = \frac{5 + \sqrt{9}}{2}, \quad x = \frac{5 - \sqrt{9}}{2}$$

$$\text{د) } \Delta = 49 - 144 = -95 < 0$$

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$$\text{الف) } \frac{b}{a} = \frac{3}{5} \quad \text{حاصل جمع، ریشه ها}$$

$$\text{ب) } \frac{c}{a} = \frac{2}{5} \quad \text{حاصل ضرب، ریشه ها}$$

$$\text{الف) } (3)^2 - 2(-2) = 9 + 4 = 13$$

$$\text{ب) } (3)^3 - 3(3)(-2) = 27 + 18 = 45$$

$$\text{الف) } \frac{7 \times 3 \times 2 \times 1}{2 \times 1 \times 1 \times 1} = 42$$

$$\frac{9 \times 3}{1 \times 1} = 27$$

$$27 + 42 = 69$$

$$\text{ب) } \frac{3 \times 2 \times 1}{1 \times 1 \times 1} = 6$$

$$\frac{3 \times 2}{1 \times 1} = 6$$

$$6 - 6 = 0$$