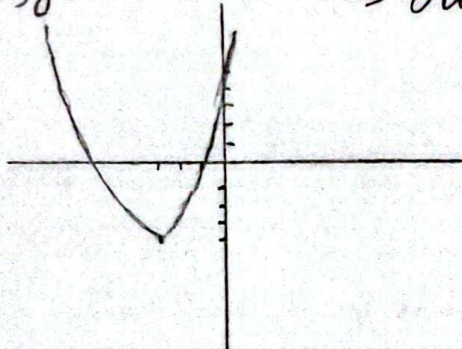
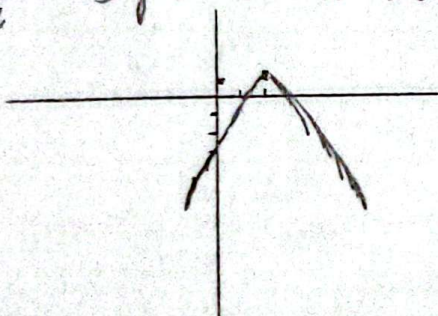


الف) $x = \frac{-b}{2a} = -2 \Rightarrow y = 9 - 1 + 8 = -4 \rightarrow \text{Min} \begin{vmatrix} -4 \\ -4 \end{vmatrix}$



ب)

الف) $x = \frac{-b}{2a} = 2 \Rightarrow y = 4 + 1 - 4 = 1 \Rightarrow \text{Max} \begin{vmatrix} 1 \\ 1 \end{vmatrix}$



ب)

$x=0 \Rightarrow y=-3 \Rightarrow \begin{vmatrix} 0 \\ -3 \end{vmatrix}$
 ↪ محل قطع شدن محور

الف) $\Delta > 0 \rightarrow \Delta = 9 - 1a \Rightarrow a < \frac{9}{1} \rightarrow a = \{x | x \in \mathbb{R}, x < \frac{9}{1}\}$

ب) $\Delta > 0 \rightarrow \Delta = 9 - 1a \Rightarrow a = \frac{9}{1}$

ج) $\Delta < 0 \rightarrow \Delta = 9 - 1a \Rightarrow a > \frac{9}{1} \rightarrow a = \{x | x \in \mathbb{R}, x > \frac{9}{1}\}$

د) $\Delta \geq 0 \rightarrow \Delta = 9 - 1a \Rightarrow a \leq \frac{9}{1} \rightarrow a = \{x | x \in \mathbb{R}, x \leq \frac{9}{1}\}$

الف) $x^2 - 2x + 1 = 2 \Rightarrow (x-1)^2 = 2 \rightarrow x-1 = \pm \sqrt{2} \rightarrow \begin{cases} x_1 = 1 + \sqrt{2} \\ x_2 = 1 - \sqrt{2} \end{cases}$

ب) $x^2 - 2x + 1 = 2 - x \Rightarrow (x-1)^2 = 2 - x \rightarrow x-1 = \pm \sqrt{2-x} \rightarrow \begin{cases} x_1 = 1 + \sqrt{2-x} \\ x_2 = 1 - \sqrt{2-x} \end{cases}$

الف) $\Delta = 4 + 4 = 8 \rightarrow \begin{cases} x_1 = \frac{2 + \sqrt{8}}{2} = 1 + \sqrt{2} \\ x_2 = \frac{2 - \sqrt{8}}{2} = 1 - \sqrt{2} \end{cases}$

ب) $\Delta = 1 + 4 = 5 \rightarrow \begin{cases} x_1 = \frac{1 + \sqrt{5}}{2} \\ x_2 = \frac{1 - \sqrt{5}}{2} \end{cases}$

$$\text{الف) } x^2 - 11x + 28 = 0 \rightarrow (x-4)(x-7) = 0 \Rightarrow \begin{cases} x_1 = 7 \\ x_2 = 4 \end{cases}$$

$$\text{ب) } x^2 + 4x - 21 = 0 \rightarrow (x+7)(x-3) = 0 \Rightarrow \begin{cases} x_1 = -7 \\ x_2 = 3 \end{cases}$$

$$\text{الف) } \delta x^2 - 12x + 7 = 0 \rightarrow x^2 - 12x + 4\delta = 0 \rightarrow (x-7)(x-\delta) = 0 \Rightarrow \begin{cases} x_1 = \frac{7}{\delta} \\ x_2 = 1 \end{cases}$$

$$\text{ب) } 4x^2 - 10x + 7 = 0 \rightarrow x^2 - 10x + 41 = 0 \rightarrow (x-4)(x-7) = 0 \Rightarrow \begin{cases} x_1 = \frac{7}{4} \\ x_2 = 1 \end{cases}$$

$$\text{الف) } 2x^2 - 8x + 3 = 0 \rightarrow \begin{cases} x_1 = \frac{5}{2} = \frac{5}{4} \\ x_2 = 1 \end{cases} \quad \text{ب) } 2x^2 + 8x + 3 = 0 \rightarrow \begin{cases} x_1 = \frac{-5}{2} = -\frac{5}{4} \\ x_2 = 1 \end{cases}$$

$$\text{ج) } \Delta = 4\delta - 1 = 17 \rightarrow \begin{cases} x_1 = \frac{\delta + \sqrt{17}}{2} \\ x_2 = \frac{\delta - \sqrt{17}}{2} \end{cases} \quad > \Delta = 49 - 4 = 45 \rightarrow \begin{cases} x_1 = \frac{-7 + \sqrt{45}}{2} \\ x_2 = \frac{-7 - \sqrt{45}}{2} \end{cases}$$

$$S = \frac{-b}{a} = 7 \quad P = \frac{c}{a} = -4$$

$$\text{الف) } S^2 - 4P = 9 - (-4) = 13$$

$$\text{ب) } S^2 - 4SP = 49 + 18 = 67$$

$$\text{الف) } \frac{7!}{8! \times 4!} + \frac{9 \times 1}{2} = 21 + 4.5 = 25.5$$

$$\text{ب) } \frac{9!}{3! \times 4!} - \frac{1 \times 7}{2} = 84 - 3.5 = 80.5$$