

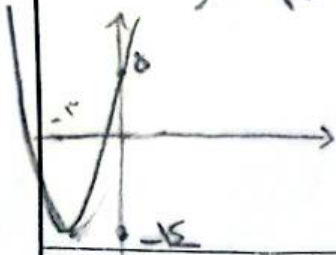
$$\text{ext} \begin{cases} x = \frac{-b}{2a} = \frac{-4}{2} = -2 \\ y = 9 - 18 + 8 = -1 \end{cases}$$

$$\begin{bmatrix} -2 \\ -1 \end{bmatrix}$$

$a > 0 \rightarrow \min$

الف)

ب)

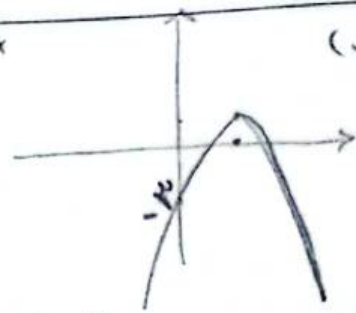


$$\text{ext} \begin{cases} x = \frac{-b}{2a} = \frac{-2}{-2} = 1 \\ y = -4 + 1 - 3 = -6 \end{cases}$$

$a < 0 \rightarrow \max$

الف)

۲



$$0 = -x^2 + 8x + 3 \quad a+b+c=0 \quad x \rightarrow +1 \quad \frac{c}{a} = \frac{-3}{-1} = 3$$

ب)

$$\Delta = b^2 - 4ac = 64 - 12 = 52 > 0 \quad \frac{9}{\Delta} > \frac{\Delta_0}{\Delta}$$

الف) $\Delta > 0$

$$9 - 12a = 0 \quad \frac{9}{\Delta} > \frac{\Delta_0}{\Delta}$$

ب) $\Delta = 0$

$$\frac{9}{\Delta} < a$$

ج) $\Delta < 0$

۳

$$\{a \mid a \in \mathbb{R}, a \leq \frac{9}{\Delta}\}$$

د)

$$\text{الف) } x^2 - 2x - 1 = 0 \quad x^2 - 2x + 1 = 2 \quad (x-1)^2 = 2 \quad x-1 = \pm\sqrt{2} \quad x = \frac{\pm\sqrt{2}+1}{1}$$

$$\text{ب) } x^2 - x - 1 = 0 \quad x^2 - x + \frac{1}{4} = \frac{5}{4} \quad (x - \frac{1}{2})^2 = \frac{5}{4} \quad x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \quad x = \frac{\pm\sqrt{5}+1}{2}$$

۴

$$\text{الف) } \Delta = b^2 - 4ac \quad 4 + 4 = 8 \quad \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-4 \pm \sqrt{8}}{2} = \frac{-4 \pm 2\sqrt{2}}{2} = -2 \pm \sqrt{2}$$

$$\text{ب) } 1 + 14 = 15 \quad \frac{-1 \pm \sqrt{17}}{2}$$

$$\Delta = b^2 - 4ac$$

۵

$$-11x^2 - 11x + 5 = (x-2)(x-5) \quad x \leftarrow \begin{matrix} 2 \\ 5 \end{matrix}$$

$$x^r + \overset{-\varepsilon}{\underset{+V}{V}} x - \varepsilon = (x - \varepsilon)(x + V) \quad x \begin{matrix} \nearrow -V \\ \searrow \varepsilon \end{matrix}$$

$$\delta \pi^r - i \pi^r + V = \pi^r - i \pi^r + \dot{\pi}^r = (\pi - 0)(\pi - V) \quad \pi - \frac{1}{\delta}$$

$$\rightarrow) \quad x^r - 1 - x + V = 0 \quad x^r - 1 \cdot x + \sqrt[r]{1-V} \cdot (x - 1) \cdot (x - V) \quad x \sqrt[r]{1-V} = 1$$

الف) $a+b+c \dots n$ $\nearrow$ $\frac{c}{a} + \frac{1}{r}$

$\rightarrow a+c = b \quad n = -1$
 $\rightarrow \frac{c}{a} = -\frac{1}{n}$

e. $\Delta = b^2 - 4ac = 10 - 1, 16 \quad x = \frac{-0 \pm \sqrt{16}}{2}$

$$2) \varepsilon \kappa^r + V \kappa + q = \Delta = b^r - \xi^r_{ac} \quad \varepsilon \eta - \rho \delta^r = \ominus$$

$\Delta \zeta_0 \rightarrow \dots$

$$S_5 = \frac{-b}{a} \quad p = \frac{c}{a}$$

$$S_2 = \frac{(-1)^2}{1}, \quad P = \frac{1}{1}, \quad -1$$

$$11a + 6 = 12$$

$\frac{1}{2} (IV + IA) = 50$
 $11 \quad 44$

$$\frac{V_{x4}}{x_{x1}} + \frac{q_{x4}}{x_{x1}} = r1 + r4 = \delta V \quad \begin{pmatrix} V \\ 0 \end{pmatrix} = \begin{pmatrix} V \\ r \end{pmatrix}$$

$$\begin{pmatrix} v \\ 0 \end{pmatrix} = \begin{pmatrix} v \\ \lambda \end{pmatrix}$$

$$\frac{\sum \frac{r \times \lambda \times v}{\lambda \times \lambda}}{\sum \frac{\lambda \times v}{\lambda}} = r \times \lambda \times v - \lambda \times v, r \times \lambda \times v, 0 \text{ y}$$