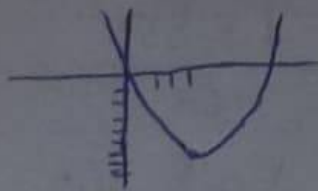


وحد $\frac{p}{a}$
 $\text{ext} \left| \begin{array}{c} 1 \\ 1 \end{array} \right| \quad (1)$

الف) $a > 0$ min $\text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ \frac{4ac - b^2}{4a} \end{array} \right|$

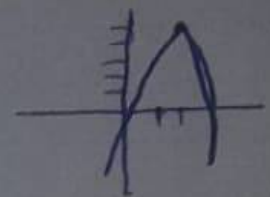
ب) $a < 0$ max $\text{ext} \left| \begin{array}{c} -\frac{b}{2a} \\ \frac{4ac - b^2}{4a} \end{array} \right|$

الف) $\text{ext} \left| \begin{array}{c} r \\ -1 \end{array} \right|$



(2)

ب) $\text{ext} \left| \begin{array}{c} r \\ 0 \end{array} \right|$



$r\alpha^2 + K\alpha - 9\alpha - r = 0$
 $r\beta^2 + K\beta - 9\beta - r = 0$

$\alpha + \beta = -\frac{K}{r}$

$\alpha\beta = -\frac{r}{r}$

$m^2 - 3m + p = 0$

$m^2 - m - r = 0 \rightarrow$

$(m-r)(m+1) = 0$

$r\alpha - 1 + K + 9 - r = 0 \Rightarrow K = -r$

(3)

$\sqrt{\alpha} - \sqrt{\beta} = 1$

$3 = \frac{-b}{a} = r m$

$(\sqrt{\alpha} - \sqrt{\beta})^2 = \alpha + \beta - 2\sqrt{\alpha\beta} = 1$

$r m - 2r m = 1$

$m = 1$

$r m^2 + m - 1 = 0 \Rightarrow p = -\frac{1}{r} = \frac{c}{a}$

(3)

$$\frac{-b}{r^2} = \frac{m}{r}$$

$$y = m$$

$$r-m-r+m=0 \quad m=1$$

$$y = ar^r - rm + 1$$

$$y = r^r + r + 1$$

$$m = \frac{c}{a} = \frac{m}{r}$$

$$r = \frac{r}{r}$$

$$r = \frac{1}{r}$$

$$m \left(\frac{m}{r} - 1 \right) = \frac{r}{r}$$

$$m(m-r) = r \rightarrow (m-r)(m+1) = 0$$

(4)

$$\frac{-\Delta}{r^2 a} = \frac{v}{r} \rightsquigarrow \frac{-9 + 4a^2}{a} = \frac{v}{r}$$

$$4a^2 - va - 1 = 0$$

$\Delta > 0$
 $\Delta < 0$
 $\Delta = 0$
 $\Delta > 0$
 $\Delta < 0$
 $\Delta = 0$

(5)

$$r^r - (a+1)r + a = 0$$

$$1-a-1+a=0$$

$$\frac{c}{a} \rightarrow r^r = a \rightarrow r \rightsquigarrow r^r - ar + b = 0$$

$$r^r - 10r + b = 0$$

$$y = r$$

$$y = r$$

$$r = 10$$

(6)

$$y_1 = -a r^r + a r + r \rightsquigarrow \frac{-a}{-ra} = \frac{1}{r}$$

$$y_1 = r b r^r - b r - 1 \rightsquigarrow \frac{b}{ra} = \frac{1}{r}$$

$$-\frac{a}{r} + \frac{a}{r} + r = \frac{a}{r} + r$$

$$y = \frac{b}{r} - \frac{b}{r} - 1 = -1 - \frac{b}{r}$$

$$a = -1r$$

$$y_r = r b \left(\frac{1}{r} \right)^r - \frac{b}{r} - 1 = \frac{a}{r} + r$$

$$b = -4$$

$$y_1 = -a \left(\frac{1}{r} \right)^r + \frac{a}{r} + r = -\frac{b}{r} - 1$$

$$-4 + 1r = -4r$$

$$y = P \omega a n^T + P m + \beta = 0 \quad (4)$$

$$\alpha + \beta = -\frac{\varepsilon}{P \omega a}$$

$$\alpha \beta = \frac{\beta}{P \omega a}$$

$$\alpha \beta = \frac{\beta}{P \omega a} \leadsto \alpha = \frac{1}{P \omega a} \quad P \omega a^2 = 1$$

$$\alpha = \pm \frac{1}{a}$$

$$\beta = -\frac{\varepsilon}{P \omega a} - \alpha \leadsto \alpha = \frac{1}{8} \leadsto \text{ans. is}$$

$$\alpha = -\frac{1}{8} \checkmark$$

$$\beta = \frac{\varepsilon}{a} + \frac{1}{8} = 1$$

$$s = -\frac{b}{a}$$

$$p = s - 1$$

$$s = a^T + b^T - 1^T$$

$$((a+b)^T - 1^T ab) - 1^T$$

$$s^T - 1^T(s-1) - 1^T s$$

$$s^T - 1^T s - 10 = 0$$

$$\checkmark (s-10)(s+1) = 10$$

$$\text{ans. is } s = 11$$