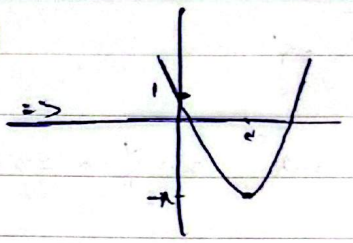
۱- الف) $\min \left| \begin{matrix} \frac{-b}{2a} \\ \frac{-\Delta}{4a} \end{matrix} \right. \Rightarrow \min \left| \begin{matrix} 1 \\ -1 \end{matrix} \right.$

ب) $\max \left| \begin{matrix} \frac{-b}{2a} \\ \frac{-\Delta}{4a} \end{matrix} \right. \Rightarrow \max \left| \begin{matrix} \frac{9}{4} \\ -\frac{1}{8} \end{matrix} \right.$

۲- الف) $S(2, -8)$

$\frac{-b}{2a} = 2$

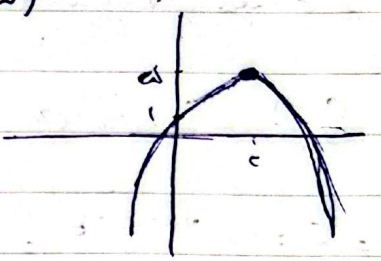
$-\frac{\Delta}{4a} = -8$



ب) $S(2, 5)$

$\frac{-b}{2a} = 2$

$-\frac{\Delta}{4a} = 5$ $\Rightarrow$

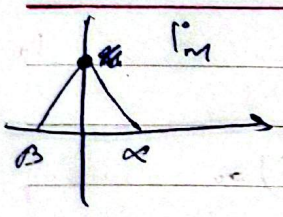


۳- $\alpha\beta = -2$, $\alpha + \beta = 1 \Rightarrow \begin{matrix} \alpha = 2 \\ \beta = -1 \end{matrix}$

$\Rightarrow -4 + k + 9 - 2 = 0 \Rightarrow k + 7 = 0 \Rightarrow k = -7$

۴- $\sqrt{a} - \sqrt{\beta} = 1 \Rightarrow a + \beta - 2\sqrt{a\beta} = 1 \Rightarrow 5m - 2\sqrt{m} = 1$

$\Rightarrow m = 1 \Rightarrow 2x^2 - x - 1 = 0 \Rightarrow \frac{c}{a} = -\frac{1}{2}$

۵- 

$S = \frac{1}{2}(\alpha - \beta) \times m$

$\frac{\sqrt{\Delta}}{|a|} * m \times \frac{1}{2} = \frac{5}{4} \Rightarrow \frac{\sqrt{m^2 + 4m + 4 - 8m}}{2} \times m \times \frac{1}{2} = \frac{5}{4}$

$\Rightarrow \sqrt{m^2 - 4m + 4} \times m = 5 \Rightarrow |m - 2| \times m = 5$ $\quad m \geq 2 \rightarrow m^2 - 2m - 5 = 0 \rightarrow \begin{matrix} m = 5 \checkmark \\ m = -1 \times \end{matrix}$

$m < 2 \Rightarrow m^2 + 2m - 5 = 0 \rightarrow \Delta < 0$

$y = x^2 - mx + 1 \Rightarrow -\frac{b}{2a} = \frac{m}{2} = \frac{5}{4}$

Page : ( ) Date :

۶- $\frac{-\Delta}{\xi a} = \frac{V}{\Lambda} \Rightarrow \frac{\xi a^2 - 9}{\xi a} = \frac{V}{\Lambda} \Rightarrow \Lambda a^2 - V\xi = \cdot \Rightarrow \Lambda a^2 - Va - 1\Lambda = \cdot$

$\Rightarrow a^2 - Va - 1\xi\xi = \cdot \Rightarrow (a-1\xi)(a+\xi) = \cdot \Rightarrow a < -\xi \div \Lambda \Rightarrow a < -\frac{\xi}{\Lambda}$ ✗ ; $a > 1\xi$ ✓

۷- $\frac{\sqrt{\Delta}}{|a|} = 2 \Rightarrow \frac{\sqrt{a^2+2a+1-\xi a}}{1} = 2 \Rightarrow \frac{\sqrt{a^2-2a+1}}{1} = 2$

$\Rightarrow \frac{a-1}{1} = 2 \Rightarrow a-1 = 2 \Rightarrow a = 3 \Rightarrow x^2 - \xi x + 3 = \cdot \Rightarrow (x-1)(x-3)$

$\frac{\sqrt{\Delta}}{|a|} = 2 \Rightarrow \frac{\sqrt{1\cdot\cdot - \xi b}}{1} = 2 \Rightarrow 1\cdot\cdot - \xi b = \xi \Rightarrow b = 2\xi \Rightarrow x^2 - 1\cdot x + 2\xi = \cdot$

$\Rightarrow (x-\xi)(x-\forall) \Rightarrow (\forall \times \xi) - (1+2+\dots+\forall) = 1\forall$

۸- $-\frac{b}{2a} = \frac{-a}{-2a} = \frac{1}{2}$ ، $-\frac{\Delta}{\xi a} = \frac{a^2+\Lambda a}{\xi a}$ ، $-\frac{b}{\xi a} = \frac{b}{\xi b} = \frac{1}{\xi}$ ، $-\frac{\Delta}{\xi a} = \frac{b^2+\Lambda b}{\Lambda b}$

$\Rightarrow 2b x^2 - bx - 1 = \cdot \Rightarrow x = \frac{1}{2} \Rightarrow \frac{1}{4}b - \frac{1}{2}b - 1 = \frac{a^2+\Lambda a}{\xi a} \Rightarrow a^2 + \Lambda a = -\xi a \Rightarrow a^2 + 12a = \cdot$

$\Rightarrow a(a+12) = \cdot$ $a < -12$ ✗ ; $a > \cdot$ ✓ ، $-ax^2 + ax + 2 \Rightarrow 12x^2 - 12x + 2 \Rightarrow x = \frac{1}{2}$

$\Rightarrow -\frac{1}{\xi} = \frac{b^2+\Lambda b}{\Lambda b} \Rightarrow -\Lambda b = \xi b^2 + 32b = 2 \Rightarrow \xi b^2 + 40b = \cdot \Rightarrow \xi b(b+1\cdot) = \cdot \Rightarrow b = -1\cdot$

$-1\cdot - (-12) = 2$

۹- $\alpha + \beta = \frac{-\xi}{2\Delta a}$ ، $\alpha\beta = \frac{b}{2\Delta a} \Rightarrow 2\Delta a^2 + 2\Delta ab = -\xi$ ، $2\Delta a^2 b = b$

$\Rightarrow 2\Delta a^2 = 1 \Rightarrow a = \pm\frac{1}{\Delta} \Rightarrow 2\Delta ab = -\Delta$ ، $2\Delta \times \frac{1}{\Delta} \times b \Rightarrow b = -1$

$2\Delta ab = -\Delta$ ، $2\Delta \times (-\frac{1}{\Delta}) \times b \Rightarrow b = 1$

$b > a \Rightarrow b = -1$ ✗ ، $b = 1$ ✓ $\Rightarrow \alpha = -\frac{1}{\Delta}$ ، $\beta = 1$ حاصل

۱۰- $a + b = -\frac{b}{a} \Rightarrow a + b = -a^2 - b^2 + 12 \Rightarrow a^2 + a + b^2 + b - 12 = \cdot$

$\Rightarrow a^2 + a - 6 + b^2 + b - 6 = \cdot \Rightarrow (a+3)(a-2) + (b+3)(b-2) = \cdot$

$\Rightarrow a < -3$ ✓ ، $a < 2$ ✗ ، $b < -3$ ✓ ، $b < 2$ ✗ ، $a + b = -6$