۱- الجبرایی

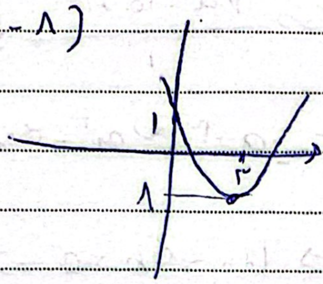
الف) $\min \left| \frac{-b}{2a}, \frac{-\Delta}{4a} \right. \Rightarrow \min \left| 1, -1 \right.$

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

۲- الف) $S(3, -8)$

$\frac{-b}{2a} = 3$

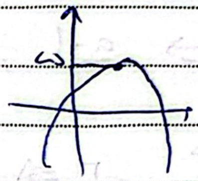
$\frac{-\Delta}{4a} = -8$



ب) $S(2, 5)$

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

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



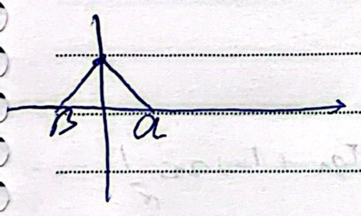
۳- $\alpha\beta = -2$, $\alpha + \beta = 1 \Rightarrow \alpha = 2$, $\beta = -1$

$\Rightarrow -4 + k + 9 - 2 = 0 \Rightarrow k + 3 = 0 \Rightarrow k = -3$

۴- $\sqrt{\alpha} - \sqrt{\beta} = 1 \Rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \Rightarrow 3m - 2\sqrt{m} = 1$

$m = 1 \Rightarrow 3m^2 - m - 1 = 0 \quad \frac{c}{a} = \frac{1}{3}$

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



$\frac{\sqrt{\Delta}}{|a|} \times m \times \frac{1}{2} = \frac{3}{2} \Rightarrow \frac{\sqrt{m^2 + 4m + 4 - 8m}}{1} \times m \times \frac{1}{2} = \frac{3}{2}$

$\Rightarrow \sqrt{m^2 - 4m + 4} \times m = 3 \Rightarrow |m-2| \times m = 3$ $\quad m \geq 2 \Rightarrow m^2 - 2m - 3 = 0$

$m = 3$ ✓ , $m = -1$ ✗

$m < 2 \Rightarrow m^2 + 2m - 3 = 0$

۶- $x^2 - mx + 1 \Rightarrow \frac{-b}{2a} = \frac{m}{2} = \frac{3}{2}$

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$\frac{-\Delta}{4a} = \frac{7}{8} \Rightarrow \frac{4a^2-5}{4a} = \frac{7}{8} \Rightarrow 32a^2 - 28a - 40 = 0 \Rightarrow$ — 6

$8a^2 - 7a - 10 = 0$

$\Rightarrow a^2 - 7a - 144 = 0 \Rightarrow (a-16)(a+9) = 0 \Rightarrow a \begin{cases} 16 \\ -9 \end{cases} \Rightarrow \sqrt{a} \begin{cases} 4 \\ -9 \ \times \end{cases}$

$\frac{\sqrt{\Delta}}{|a|} = 2 \Rightarrow \frac{\sqrt{a^2+4a+1-4a}}{1} = 2 \Rightarrow \frac{\sqrt{a^2-2a+1}}{1} = 2$ — 7

$\Rightarrow \frac{a-1}{1} = 2 \Rightarrow a - 1 = 2 \Rightarrow a = 3 \Rightarrow x^2 - 4x + 3 = 0 \Rightarrow (x-1)(x-3)$

$\frac{\sqrt{\Delta}}{|a|} = 2 \Rightarrow \frac{\sqrt{100-4b}}{1} = 2 \Rightarrow 100 - 4b = 4 \Rightarrow b = 24 \Rightarrow x^2 - 10x + 24$

$\Rightarrow (x-4)(x-6) \Rightarrow 6 \times 4 -$

2×1

$= 22$

$\frac{-b}{2a} = \frac{-a}{-2a} = \frac{1}{2}, \frac{\Delta}{4a} = \frac{a^2+8a}{4a}, \frac{-b}{2a} = \frac{b}{2b} = \frac{1}{2}, \frac{-\Delta}{4a} = \frac{b^2+8b}{8b}$

$\Rightarrow 2bx^2 - bx - 1 = 0 \Rightarrow x = \frac{1}{2} \Rightarrow \frac{1}{2}b - \frac{1}{2}b - 1 = \frac{a^2+8a}{4a} \Rightarrow$

$a^2 + 8a = -4a \Rightarrow a^2 + 12a = 0$

$\Rightarrow a(a+12) = 0 \begin{cases} 0 \ \times \\ -12 \ \checkmark \end{cases} \quad -ax^2 + ax + 2 \Rightarrow 12x^2 - 12x + 2 \Rightarrow x = \frac{1}{2}$

$\Rightarrow -\frac{1}{4} = \frac{b^2+8b}{8b} \Rightarrow -8b = 4b^2 + 32b \Rightarrow 4b^2 + b = 0 \Rightarrow 4b(b+6) = 0 \Rightarrow b = -6$

$-6 - (-12) = 2$

$\alpha + \beta = \frac{-4}{25a}, \alpha\beta = \frac{b}{25a} \Rightarrow 25a\alpha^2 + 25a\alpha\beta = -4, 25a^2b = b - 9$

$25a^2 = 1 \Rightarrow a = \pm\frac{1}{5} \Rightarrow$ $25ab = -5, 25a\frac{1}{5} \times b \Rightarrow b = -1$

$25ab = -5, 25a(-\frac{1}{5}) \times b \Rightarrow b = 1$

$b | a \Rightarrow \begin{matrix} b=1 \\ b=2 \end{matrix} \Rightarrow \alpha = -\frac{1}{5}, \beta = 1$ ⓓ α

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$a+b=\frac{-b}{a}$ $ab=-a^2-b^2+11 \rightarrow a^2+a+b^2+b-12=0$

$a^2-a-4+b^2+b-8=0 \Rightarrow (a+2)(a-2)+(b+2)(b-2)=0$

$\Rightarrow a \begin{cases} -2 \\ 2 \checkmark \end{cases}$ $b \begin{cases} -2a \\ 2 \checkmark \end{cases}$ $a+b=2$