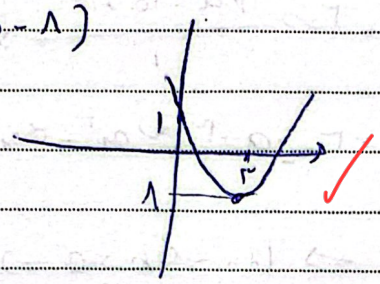
۱۷

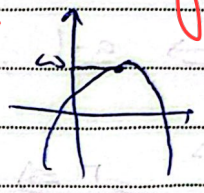
الف) $\min\left|\frac{-b}{2a}, \frac{-\Delta}{4a}\right| \Rightarrow \min|1, -1|$ ✓ ابتدا عبارت را ساده کن. -1 (۱)

ب) $\max\left|\frac{-b}{2a}, \frac{-\Delta}{4a}\right| \Rightarrow \max\left|\frac{9}{4}, 8-\frac{1}{8}\right|$ $\quad ext\left|\begin{array}{l} x_s = \frac{-b}{2a} = \frac{-2}{-4} = \frac{1}{2} \\ y_s = -2\left(\frac{1}{2}\right)^2 + 2\left(\frac{1}{2}\right) - 5 = \frac{-31}{8} \end{array}\right.$

الف) $S(2, -8) \Rightarrow S(2, \infty)$ ۲ (۲)

$\frac{-b}{2a} > 2$ ✓ $\quad \frac{-\Delta}{4a} > \infty$



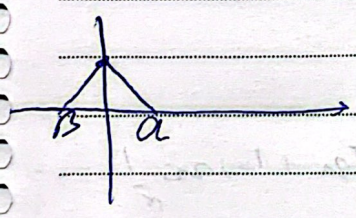


$\alpha\beta < -2$ ، $\alpha + \beta < 1 \Rightarrow \alpha > 2$, $\beta < -1$ (۲) ۳۰

$\Rightarrow -4k + 96 < 0 \Rightarrow k + 24 > 0 \Rightarrow k > -2$ ✓

$\sqrt{\alpha} - \sqrt{\beta} > 1 \Rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} > 1 \Rightarrow 2m - 2\sqrt{m} > 1$ ۳

$m > 1 \Rightarrow 2m^2 - m - 1 > 0$ $\quad \frac{c}{a} > \frac{-1}{2}$ ✓ (۲)



$S > \frac{1}{2}(\alpha - \beta) \times m$ ۴

$\frac{\sqrt{\Delta}}{|a|} \times m \times \frac{1}{m} > \frac{2}{5} \Rightarrow \frac{\sqrt{m^2 + 4m + 4 - 4m}}{2} \times m \times \frac{1}{m} > \frac{2}{5}$ (۱٫۵)

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

$m = 2$ ✓

$m < 2 \Rightarrow m^2 + 2m - 2 > 0$ $\quad m > -1$ ✓

$y = x^2 + x + 1 \rightarrow x_s = \frac{-b}{2a} = \frac{-1}{2}$

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

$S_\Delta = \frac{1}{2} \times \frac{|m-2|}{2} \times |m| = \frac{2}{4} \rightarrow |m(m-2)| = 2 \rightarrow m(m-2) = 2 \rightarrow m^2 - 2m - 2 = 0 \rightarrow \begin{cases} m = -1 \\ m = 2 \end{cases}$

$\rightarrow m(m-2) = -2 \rightarrow m^2 - 2m + 2 = 0 \rightarrow \Delta < 0$

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$\frac{-\Delta}{4a} = \frac{v}{\wedge} \Rightarrow \frac{6a^2-\Delta}{6a} = \frac{v}{\wedge} \Rightarrow 8a^2-8a-v8=0 \Rightarrow$ -4

$\wedge a^2-va-\wedge=0$ (2)

$\Rightarrow a^2-va-\frac{\wedge}{2}=0 \Rightarrow (a-4)(a+2)=0 \Rightarrow a \begin{cases} 4 \\ -2 \end{cases} \xrightarrow{\div 4} a \begin{cases} 1 \\ -\frac{2}{4} \end{cases}$

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

(2)

$\Rightarrow \frac{a-1}{1}=2 \Rightarrow a-1=2 \Rightarrow a=3 \Rightarrow x^2-6x+8=0 \Rightarrow (x-4)(x-2)$

$\frac{\sqrt{\Delta}}{|a|}=2 \Rightarrow \frac{\sqrt{4b-6b}}{1}=2 \Rightarrow 4b-6b=6 \Rightarrow b=-6 \Rightarrow x^2-6x+8$

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

2×1

$=21$

$\frac{-b}{2a}=\frac{-a}{-2a}=\frac{1}{2} \Rightarrow \frac{\Delta}{4a}=\frac{a^2+8a}{4a} \Rightarrow \frac{-b}{2a}=\frac{b}{4b}=\frac{1}{4} \Rightarrow \frac{-\Delta}{4a}=\frac{b^2+8b}{8ab}$ (1,0)

$-\frac{a}{14}+\frac{a}{4}+2=\frac{-b}{8}-1 \rightarrow \frac{12}{14}=\frac{-b}{8} \rightarrow \boxed{b=-6}$

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

$a^2+8a=-4a \Rightarrow a^2+12a=0$ $\quad b-a=-6-(-11)=6$

$\Rightarrow a(a+12)=0 \xleftarrow{\neq 0} a=-12$ $\quad = ax^2+9x+2 \Rightarrow 12x^2-12x+2=x-1$

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

$-b-(-12)=2$

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

$2a^2=1 \Rightarrow a=\pm\frac{1}{\sqrt{2}} \Rightarrow$ $2a\alpha b=-\sqrt{2}$, $2a\alpha\left(-\frac{1}{\sqrt{2}}\right)\alpha b=1 \Rightarrow b=1$ (2)

$b|a \Rightarrow \frac{b=1}{b=2} \Rightarrow \alpha=-\frac{1}{\sqrt{2}}, \beta=1$ $\quad \alpha=-\beta$

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$a+b=\frac{-b}{a}$ $ab=-a^2-b^2+11 \rightarrow a^2+a+b^2+b-15=0$

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

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

$x^2-(\underbrace{a^2+b^2-11}_{S=\frac{-b}{a}})x+\underbrace{a+b-1}_{P=ab}=0$

$\rightarrow \begin{cases} a^2+b^2-11=\frac{-b}{a} \rightarrow S^2-2P-11=S & (I) \\ a+b-1=ab \rightarrow S-1=P & (II) \end{cases}$

$\rightarrow S^2-2(S-1)-11=S \rightarrow S^2-3S-10=0 \rightarrow (S-5)(S+2)=0 \rightarrow \begin{cases} S=-2 \times \\ S=5 \checkmark \end{cases}$