

الف) $x^2 - 4x + 1 = 0 \xrightarrow{+1} x^2 - 4x + 4 = 1$
 $(x-2)^2 = 1 \rightarrow \begin{cases} x-2=1 \Rightarrow x=3 \\ x-2=-1 \Rightarrow x=1 \end{cases}$

ب) $x^2 + 1x + 14 = 0 \xrightarrow{+9} x^2 + 1x + 14 = 9$
 $(x+1)^2 = 9 \rightarrow \begin{cases} x+1=3 \Rightarrow x=2 \\ x+1=-3 \Rightarrow x=-4 \end{cases}$

الف) $x^2 - 5x + 4 = 0 \rightarrow (x-1)(x-4) = 0 \rightarrow \begin{cases} x=1 \\ x=4 \end{cases}$

ب) $x^2 - 5x - 14 = 0 \rightarrow (x-7)(x+2) = 0 \rightarrow \begin{cases} x=7 \\ x=-2 \end{cases}$

الف) $x^2 - 3x - 5 = 0$

$x = \frac{3 \pm \sqrt{9+20}}{2} = \begin{cases} \frac{3+\sqrt{29}}{2} \\ \frac{3-\sqrt{29}}{2} \end{cases}$

ب) $1x^2 - 4x + \frac{1}{4} = 0$

$x = \frac{4 \pm \sqrt{16 - \frac{1}{4}}}{1} = \begin{cases} x = \frac{4 + \sqrt{15\frac{1}{4}}}{1} \\ x = \frac{4 - \sqrt{15\frac{1}{4}}}{1} \end{cases}$

الف) $x^2 - 3x + 2 = 0 \rightarrow \begin{cases} x=1 \\ x=2 \end{cases}$

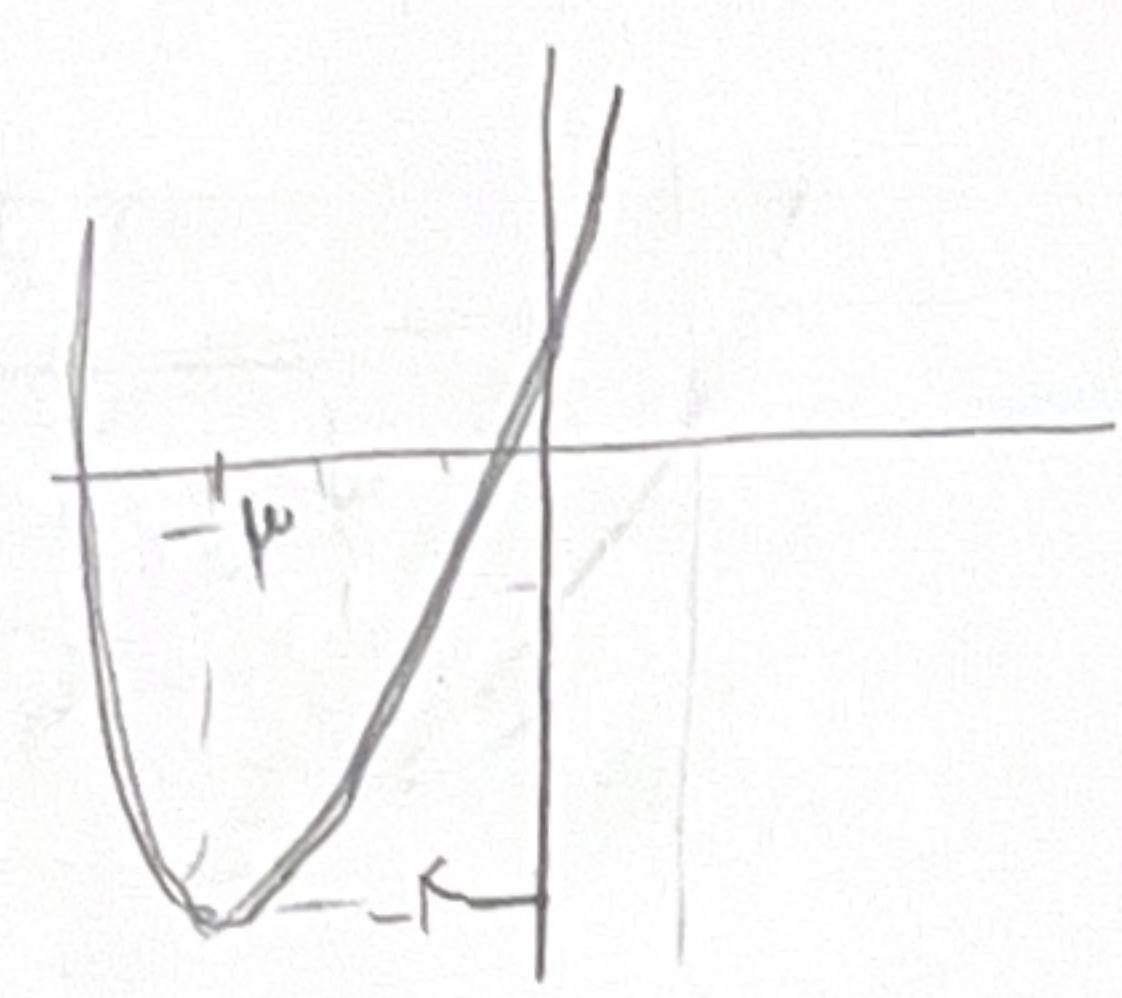
ب) $1x^2 + x - 12 = 0 \rightarrow \begin{cases} x=-4 \\ x=3 \end{cases}$

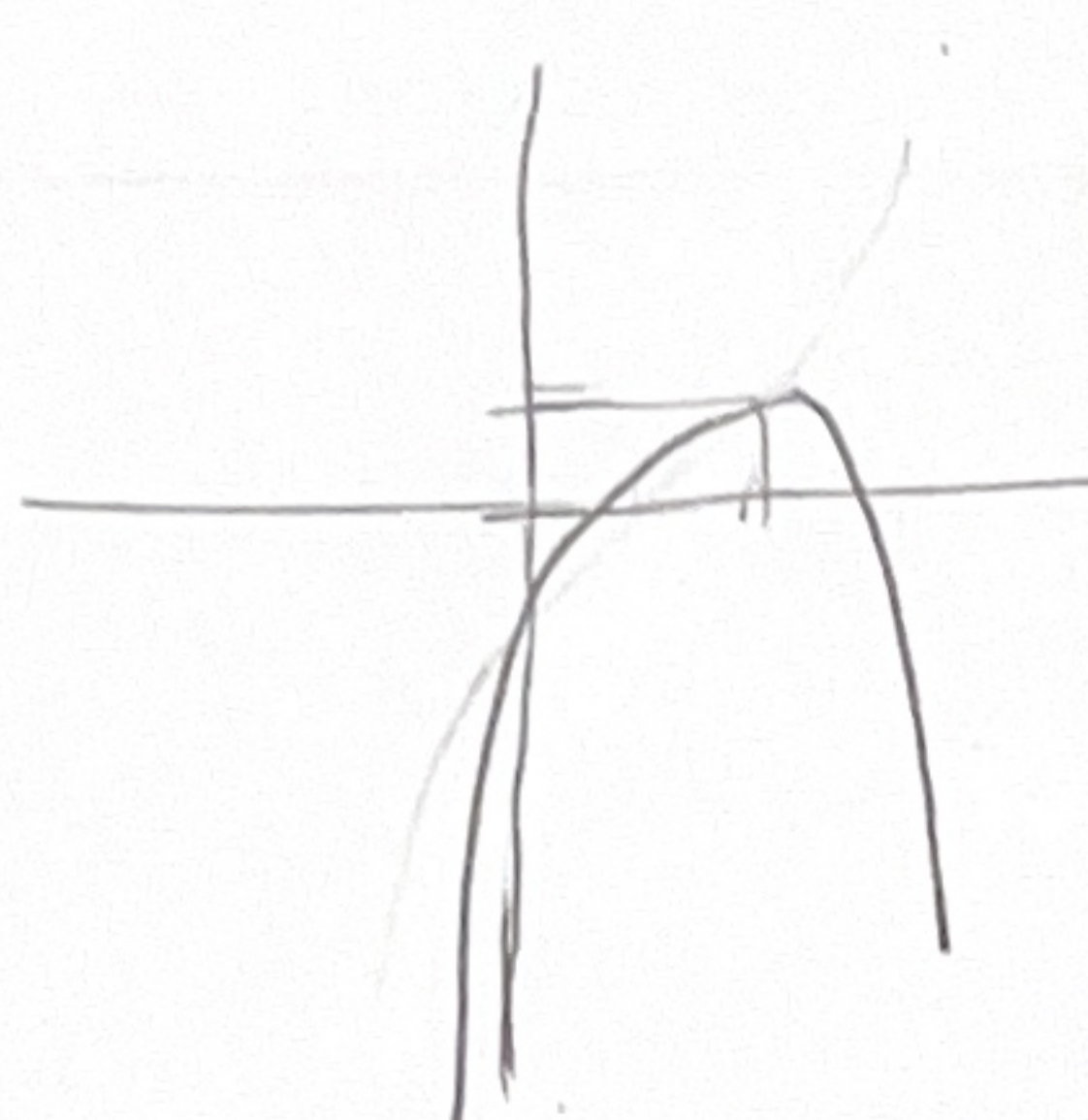
الف) $5x^2 - 12x + 1 = 0 \rightarrow x^2 - 12x + 1 = 0 \rightarrow (x-6)(x-1) = 0 \rightarrow \begin{cases} x=6 \\ x=1 \end{cases}$

ب) $1x^2 - 10x + 1 = 0 \rightarrow x^2 - 10x + 1 = 0 \rightarrow (x-5)(x-1) = 0 \rightarrow \begin{cases} x=5 \\ x=1 \end{cases}$

الف) $x^2 + \omega x - 1 = 0$ $\frac{-\omega \pm \sqrt{\omega^2 - 14}}{-9} =$ $x = \begin{cases} \frac{-\omega + \sqrt{\omega^2 - 14}}{-9} \\ \frac{-\omega - \sqrt{\omega^2 - 14}}{-9} \end{cases}$	ب) $x^2 - x + 1 = 0$ $\frac{1 \pm \sqrt{1 - 14}}{1} =$ ریشه ندارد	پ) $x^2 - 14x + 1 = 0$ $\frac{14 \pm \sqrt{14^2 - 14}}{14} =$ ریشه دارد	ت) $x^2 - x + 1 = 0$ $\frac{1 \pm \sqrt{1 - 14}}{1} =$ ریشه ندارد
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الف) $x^2 + 4x + \omega = 0$	7
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$y = x^2 + 4x + \omega$ min $\begin{cases} -\mu \\ -1 \end{cases}$ $y = 9 - 1 + \omega = -2$		1
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$y = -x^2 + 14x - \mu$ max $\begin{cases} 1 \\ 1 \end{cases}$ $y = -1 + 14 - \mu = 1$		9
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$x^2 - 14x - 1 = 0 \rightarrow x = 1$ $\rightarrow x = -1$ $S = -1$ $P = -1$	الف) $S^2 - 14P = 1 + 14 = \omega$ ب) $S^2 - 14P = -1 - 14 = -15$	10
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