

الف) $x^2 - 6x + 9 = 1 \rightarrow (x-3)^2 = 1 \rightarrow x-3 = \pm 1 \Rightarrow \begin{cases} x = 4 \\ x = 2 \end{cases}$

ب) $x^2 + 11x + 14 = 9 \rightarrow (x+4)^2 = 9 \rightarrow x+4 = \pm 3 \Rightarrow \begin{cases} x = -7 \\ x = -1 \end{cases}$

الف) $(x-2)(x-3) = 0 \rightsquigarrow \begin{cases} x = 2 \\ x = 3 \end{cases}$

ب) $(x-7)(x+2) = 0 \rightsquigarrow \begin{cases} x = 7 \\ x = -2 \end{cases}$

الف) $\frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{3 \pm \sqrt{9+20}}{2} = \frac{3 \pm \sqrt{29}}{2} \rightsquigarrow \begin{cases} x = \frac{3 + \sqrt{29}}{2} \\ x = \frac{3 - \sqrt{29}}{2} \end{cases}$

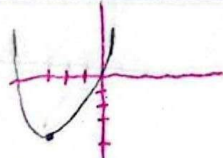
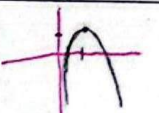
ب) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \rightarrow \frac{1 \pm \sqrt{16-4}}{4} = \frac{1 \pm 2\sqrt{3}}{4} = \frac{1}{2} \pm \frac{\sqrt{3}}{2} \rightsquigarrow \begin{cases} x = \frac{1 + \sqrt{3}}{2} \\ x = \frac{1 - \sqrt{3}}{2} \end{cases}$

الف) $a+b+c = 0 \rightsquigarrow \begin{cases} x = 1 \\ x = \frac{c}{a} = 2 \end{cases}$

ب) $a+c=b \rightsquigarrow \begin{cases} x = -1 \\ x = -\frac{c}{a} = \frac{3}{4} \end{cases}$

الف) $x^2 - 12x + 35 = 0 \rightsquigarrow (x-5)(x-7) = 0 \rightsquigarrow \begin{cases} x = \frac{5}{1} \\ x = \frac{7}{1} \end{cases}$

ب) $x^2 - 10x + 11 = 0 \rightsquigarrow (x-2)(x-7) = 0 \rightsquigarrow \begin{cases} x = \frac{2}{1} \\ x = \frac{7}{1} \end{cases}$

الف) $\frac{-5 \pm \sqrt{25 - 12}}{-6} = \frac{-5 \pm \sqrt{13}}{-6} \rightarrow \begin{cases} x = \frac{-5 + \sqrt{13}}{-6} \\ x = \frac{-5 - \sqrt{13}}{-6} \end{cases}$ $\sqrt{-15}$ ب) $\frac{1 \pm \sqrt{1 - 16}}{3} = \dots \rightarrow \Delta < 0 \rightarrow$ جوابی در اعداد حقیقی ندارد پ) $\frac{4 \pm \sqrt{16 - 16}}{4} = \frac{4}{4} = 1 \rightarrow \begin{cases} x = 1 \end{cases}$ یک ریشه مضاعف	ت) $\frac{1 \pm \sqrt{1 - 8}}{4} \Rightarrow$ جوابی در مجموعه اعداد حقیقی ندارد $\Delta < 0$
الف) $\Delta > 0 \rightarrow 9 - 1\alpha > 0 \rightarrow 9 > 1\alpha \rightarrow \alpha < \frac{9}{1}$ ب) $\Delta = 0 \rightarrow 9 - 1\alpha = 0 \rightarrow 9 = 1\alpha \rightarrow \alpha = \frac{9}{1}$ ج) $\Delta < 0 \rightarrow 9 - 1\alpha < 0 \rightarrow 9 < 1\alpha \rightarrow \alpha > \frac{9}{1}$ د) $\Delta \geq 0 \rightarrow \alpha \leq \frac{9}{1}$	۶
$\alpha > 0 \Rightarrow \min$ $x = \frac{-b}{2a} = \frac{-6}{2} = -3$ $y = 9 - 1\alpha + \alpha = -4$	الف) $\begin{vmatrix} -3 \\ -4 \end{vmatrix}$ ب)  ۸
$\alpha < 0 \Rightarrow \max$ $x = \frac{-b}{2a} = \frac{-4}{-2} = 2$ $y = -4 + 1 - 3 = -1$	الف) $\begin{vmatrix} 2 \\ -1 \end{vmatrix}$ ب)  $\frac{-b - \sqrt{\Delta}}{2a} = \frac{-4 - \sqrt{16 - 12}}{-2} = \frac{-4 - \sqrt{4}}{-2} = \frac{-4 - 2}{-2} = \frac{-6}{-2} = 3$ $\frac{-b + \sqrt{\Delta}}{2a} = \frac{-4 + \sqrt{4}}{-2} = \frac{-4 + 2}{-2} = \frac{-2}{-2} = 1$ ۹
$s = 3, p = -2$ الف) $(3)^2 - 2(-2) = 9 + 4 = 13$ ب) $27 + \underbrace{(-3 \times 3 \times -2)}_{18} = \frac{45}{11}$	۱۰