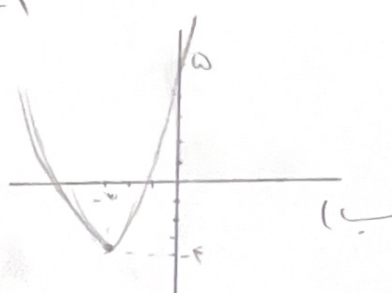


الف)  $a = + \Rightarrow \min = \left[ \frac{-b}{2a} \right] \Rightarrow \frac{-b}{2a} = \frac{-4}{2} = -2 \Rightarrow \text{ext.} \left. \begin{matrix} -2 \\ -4 \end{matrix} \right\}$

$y = x^2 + 4x + 5 \Rightarrow y = 9 - 1 + 5 = -4$

ب)  $\hookrightarrow \text{نقطه} = y = 5$



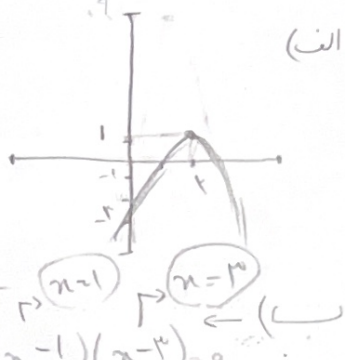
الف)  $y = -x^2 + 4x - 3 \Rightarrow y = 1 - 1 + -3 = -3$

$a = - \Rightarrow \text{Max} = \text{ext.} \left[ \frac{-b}{2a} \right] \Rightarrow \frac{-b}{2a} = \frac{+4}{-2} = -2 \Rightarrow \text{ext.} \left[ \begin{matrix} 2 \\ 1 \end{matrix} \right]$

$\frac{-b}{2a} \Rightarrow \frac{-4}{-2} = 2$

ب)  $y = -3$

$-x^2 + 4x - 3 = 0 \Rightarrow (x-1)(x-3) = 0 \Rightarrow x = 1, x = 3$



الف)  $\Delta = b^2 - 4ac > 0 \Rightarrow 9 - 4a > 0 \Rightarrow 9 > 4a \Rightarrow a < \frac{9}{4}$

ب)  $\Delta = 0 \Rightarrow 9 - 4a = 0 \Rightarrow 9 = 4a \Rightarrow a = \frac{9}{4}$

ج)  $\Delta < 0 \Rightarrow 9 - 4a < 0 \Rightarrow 9 < 4a \Rightarrow a > \frac{9}{4}$

د)  $\Delta > 0 \Rightarrow 9 - 4a > 0 \Rightarrow 9 > 4a \Rightarrow a < \frac{9}{4}$

الف)  $x^2 - 2x - 1 = 0 \Rightarrow (x-1)^2 = 2 \Rightarrow x-1 = \pm\sqrt{2} \Rightarrow x = 1 \pm \sqrt{2}$

ب)  $x^2 - x - 1 = 0 \Rightarrow (x - \frac{1}{2})^2 = \frac{5}{4} \Rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \Rightarrow x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}$

الف)  $x^2 - 2x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac = 4 - (4 \times (-1)) = 8$

$x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{2 \pm \sqrt{8}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2}$

ب)  $x^2 + x - 1 = 0 \Rightarrow \Delta = b^2 - 4ac = 1 - (4 \times (-1)) = 5$

$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{5}}{2}$

الف)  $x^2 - 11x + 28 = 0$

$(x-4)(x-7) = 0 \rightarrow \boxed{x=4}$   
 $\rightarrow \boxed{x=7}$

$\rightarrow \boxed{x=-V}$

ب)  $x^2 + 3x - 28 = 0 \Rightarrow (x+7)(x-4) = 0$   
 $\rightarrow \boxed{x=4}$

الف)  $2x^2 - 12x + 10 = 0$

$x^2 - 6x + 5 = 0 \rightarrow (x-5)(x-1) = 0$

$\rightarrow \boxed{x = \frac{V}{\Delta} = 1, 5}$

$\rightarrow \boxed{x = \frac{\Delta}{a} = 1}$

ب)  $3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) = 0$   
 $\rightarrow \boxed{x = \frac{V}{\Delta} = 1}$   
 $\rightarrow \boxed{x = \frac{\Delta}{a} = 7}$

الف)  $2x^2 - 5x + 2 = 0 \xrightarrow{\Delta} x^2 - 5x + 4 = 0 \Rightarrow (x-1)(x-4) = 0$   
 $\rightarrow \boxed{x = \frac{V}{\Delta} = 1}$   
 $\rightarrow \boxed{x = \frac{\Delta}{a} = 4}$

ب)  $2x^2 + 5x + 2 = 0 \xrightarrow{\Delta} x^2 + 5x + 4 = 0 \Rightarrow (x+1)(x+4) = 0$   
 $\rightarrow \boxed{x = -\frac{V}{\Delta} = -1}$   
 $\rightarrow \boxed{x = -\frac{\Delta}{a} = -4}$

ج)  $2x^2 - 5x + 1 = 0 \xrightarrow{\Delta} \Delta = b^2 - 4ac = 25 - (4 \times 2 \times 1) = 17$   
 $\rightarrow \boxed{x = \frac{V}{\Delta} = -1/5}$   
 $\rightarrow \boxed{x = \frac{\Delta}{a} = -1/5}$   
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{5 \pm \sqrt{17}}{4}$

د)  $2x^2 + 5x + 9 = 0 \Rightarrow \Delta = b^2 - 4ac = 25 - 36 = -11$

$x^2 - 3x - 2 = 0 \xrightarrow{\Delta} \Delta = b^2 - 4ac = 9 + 8 = 17 \rightarrow x = \frac{V \pm \sqrt{17}}{1} \Rightarrow S_1 = \frac{3 + \sqrt{17}}{1}, S_2 = \frac{3 - \sqrt{17}}{1}$   
 $P = \frac{3 + \sqrt{17}}{1} \times \frac{3 - \sqrt{17}}{1} = \frac{9 - 17}{1} = -8$   
 $S = \frac{V}{a} = 3$

الف)  $S^2 - 1P = 9 - (-8) = 17$

ب)  $S^2 - 3SP = 9 + 18 = 27$

الف)  $\begin{bmatrix} V \\ a \end{bmatrix} + \begin{bmatrix} q \\ r \end{bmatrix} = \frac{q \times \Delta}{r!} = 34$

$\frac{V \times 4 \times 4 \times 4 \times 4 \times 4}{4 \times 4 \times 4 \times 4 \times 4} = 11 + 3q = 5V$   
 $\frac{q \times r}{V!} = 11, \frac{\Delta \times V}{V!} = 11$

ب)  $\begin{bmatrix} q \\ r \end{bmatrix} - \begin{bmatrix} 1 \\ 1 \end{bmatrix} = 11 - 1 = 10$