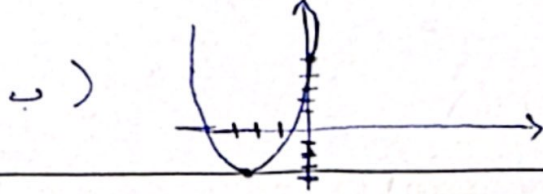
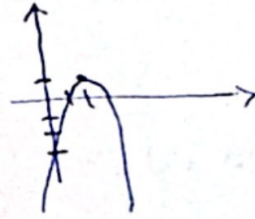


الف) $\min$ سی $\Delta = b^2 - 4ac = 36 - 12 = 24$
 $\Delta > 0 \Rightarrow$ عرض از مبدأ > 0
 $\begin{cases} d_p = -\frac{b}{2a} = -\frac{6}{1} = -6 \\ x_p = -\frac{\Delta}{4a} = -\frac{24}{4} = -6 \end{cases}$



الف) $\max$ $\begin{cases} d_p = -\frac{b}{2a} = -\frac{6}{-2} = 3 \\ x_p = -\frac{\Delta}{4a} = -\frac{12}{-4} = 3 \end{cases}$ عرض از مبدأ > 0
 $\Delta = 12 - 12 = 0$



ب) $\alpha = 1$
 $\alpha = \frac{c}{a} = \frac{1}{-1} = -1$

الف) $\Delta > 0 \Rightarrow 9 - 4a > 0$
 $-4a > -9$
 $a < \frac{9}{4} \Rightarrow a < 2.25$

ب) $\Delta = 0 \Rightarrow 9 - 4a = 0$
 $a = \frac{9}{4} \Rightarrow a = 2.25$

ج) $\Delta < 0 \Rightarrow 9 - 4a < 0$
 $a > \frac{9}{4} \Rightarrow a > 2.25$

د) $a < \frac{9}{4} \cup a = \frac{9}{4} \Rightarrow a \leq \frac{9}{4}$

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

ب) $x^2 - x - 1 + \frac{\Delta}{\epsilon} = \frac{\Delta}{\epsilon} \Rightarrow x^2 - x + \frac{1}{\epsilon} = \frac{\Delta}{\epsilon} \Rightarrow (x - \frac{1}{2})^2 = \frac{\Delta}{\epsilon} \Rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{\Delta}{\epsilon}}$
 $x = \frac{1 + \sqrt{\Delta}}{2} \cup x = \frac{1 - \sqrt{\Delta}}{2}$

الف) $x^2 - 2x - 1 = 0$
 $\Delta = b^2 - 4ac = 4 + 4 = 8$
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2}$
 $x = 1 + \sqrt{2}$
 $x = 1 - \sqrt{2}$

ب) $x^2 + x - 4 = 0$
 $\Delta = b^2 - 4ac = 1 + 16 = 17$
 $x = \frac{-1 \pm \sqrt{17}}{2} \Rightarrow x = \frac{-1 + \sqrt{17}}{2} \cup x = \frac{-1 - \sqrt{17}}{2}$

$$\text{الف) } m^2 - 11m + 28 = 0$$

$$(m-7)(m-4) = 0$$

$$\underline{m=7}, \underline{m=4}$$

$$\text{ب) } m^2 + 3m - 28 = 0$$

$$(m+7)(m-4) = 0$$

$$m = -7$$

$$m = 4$$

$$\text{الف) } 5m^2 - 14m + 7 = 0 \Rightarrow m^2 - 14m + 35 = 0$$

$$(m-7)(m-5) = 0$$

$$m = \frac{7}{5} \quad m = \frac{5}{1} = 5$$

$$\text{ب) } 3m^2 - 10m + 7 = 0 \quad m^2 - 10m + 21 = 0$$

$$(m-7)(m-3) = 0$$

$$m = \frac{7}{3} = 2 \frac{1}{3}$$

$$m = \frac{3}{1} = 3$$

$$\text{الف) } 2m^2 - 5m + 2 = 0 \quad a+b+c=0 \Rightarrow m = 1$$

$$m = \frac{c}{a} = \frac{2}{1} = 2$$

$$\text{ب) } 2m^2 + 5m + 2 = 0 \quad a+b+c=0 \Rightarrow m = -1$$

$$\text{ج) } 2m^2 - 5m + 1 = 0 \quad \Delta = 25 - 4 = 21 \quad m = \frac{5 \pm \sqrt{21}}{4}$$

$$2m^2 + 7m + 9 = 0$$

$$\Delta = 49 - 18 = 31 \Rightarrow \text{محل لا يوجد}$$

$$m = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{5 \pm \sqrt{21}}{4}$$

$$m = \frac{5 + \sqrt{21}}{4}$$

$$m = \frac{5 - \sqrt{21}}{4}$$

$$\text{الف) } S^2 - 2PS = 9 \quad S = -\frac{b}{a} = 13 \quad P = \frac{c}{a} = -2$$

$$9 - 2(13)(-2) = 9 + 52 = 61$$

$$\text{ب) } S^2 - 2PS = 9 + 52 = 61$$

$$\text{الف) } \left(\frac{7}{5}\right) + \left(\frac{5}{7}\right) = \frac{7!}{5! \times 2!} + \frac{5!}{7! \times 2!} = \frac{7 \times 9}{5} = 3 \frac{3}{5}$$

$$21 + 39 = 60$$

$$\text{ب) } \left(\frac{16}{9}\right) - \left(\frac{1}{2}\right) = \frac{9!}{8! \times 1!} - \frac{1!}{2! \times 1!} = 16 - \frac{1}{2} = 15 \frac{1}{2}$$

$$16 - 1 = 15$$