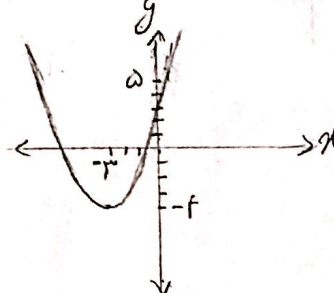
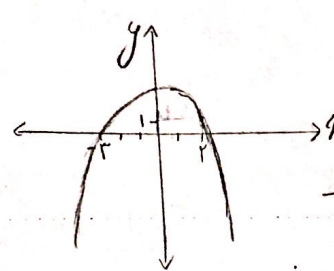


$y = x^2 + 4x + 5 \xrightarrow{x=+} \min \rightarrow \text{ext}$
 $x = \frac{-b}{2a} = \frac{-4}{2} = -2$
 $y = \frac{-\Delta}{4a} = \frac{-(b^2 - 4ac)}{4a} = \frac{-(16 - 20)}{4} = \frac{4}{4} = 1$
 $a=1, b=4, c=5$



$y = -x^2 + 4x - 3 \xrightarrow{x=-} \max \rightarrow \text{ext}$
 $x = \frac{-b}{2a} = \frac{-4}{-2} = 2$
 $y = \frac{-\Delta}{4a} = \frac{-(b^2 - 4ac)}{4a} = \frac{-(16 - 12)}{-4} = \frac{-4}{-4} = 1$
 $a=-1, b=4, c=-3$



→ نقاط ۲، ۳ و ۴ را قطع می‌کند

$x^2 - 2x + a = 0 \rightarrow a = 2 / b = -2 / c = a$
 $\Delta = b^2 - 4ac \rightarrow (-2)^2 - 4a = 4 - 4a > 0 \rightarrow a < \frac{1}{1}$
 $\Delta = 4 - 4a = 0 \quad 4 = 4a \quad a = \frac{1}{1}$
 $\Delta = 4 - 4a < 0 \quad 4 < 4a \quad a > \frac{1}{1}$
 $\Delta = 4 - 4a \geq 0 \quad 4 \geq 4a \quad a \leq \frac{1}{1}$

الف) ۲ جواب حقیقی $\Delta > 0$
 ب) یک جواب حقیقی $\Delta = 0$
 ج) فاقد جواب حقیقی $\Delta < 0$
 د) دارای یک جواب $\Delta \geq 0$

$x^2 - 2x - 1 = 0 \rightarrow x^2 - 2x = 1$ (بهر طرف ۱ اضافه می‌کنیم)
 $x^2 - 2x + 1 = 1 + 1$
 $(x-1)^2 = 2$
 $x-1 = \pm\sqrt{2}$
 $x = 1 \pm \sqrt{2}$

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

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

$x^2 + x - 1 = 0 \rightarrow \Delta = b^2 - 4ac \rightarrow 1^2 - (-4) = 5$
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{-1 \pm \sqrt{5}}{2}$

$x^2 - 11x + 28 = 0 \rightarrow (x-4)(x-7) \rightarrow \boxed{x=4}$ $x^2 + 3x - 28 = 0 \rightarrow (x+7)(x-4) \rightarrow \boxed{x=-7}$ $x^2 - 12x + 20 = 0 \rightarrow (x-4)(x-5) \rightarrow \boxed{x=5}$ $x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) \rightarrow \boxed{x=7}$	الف 4 5 7
$2x^2 - 5x + 2 = 0 \rightarrow x^2 - 2.5x + 1 = 0 \rightarrow (x-1)(x-2) \rightarrow \boxed{x=2}$ $2x^2 - 10x + 12 = 0 \rightarrow x^2 - 5x + 6 = 0 \rightarrow (x-2)(x-3) \rightarrow \boxed{x=3}$	الف 2 3
$2x^2 - 5x + 2 = 0 \rightarrow x^2 - 2.5x + 1 = 0 \rightarrow (x-1)(x-2) \rightarrow \boxed{x=2}$ $2x^2 + 5x + 2 = 0 \rightarrow x^2 + 2.5x + 1 = 0 \rightarrow (x+1)(x+2) \rightarrow \boxed{x=-2}$ $2x^2 - 5x + 1 = 0 \rightarrow x^2 - 2.5x + 0.5 = 0 \rightarrow \Delta = 6.25 - 2 = 4.25 > 0$ $\Delta = b^2 - 4ac = 25 - 20 = 5$ $x = \frac{-(-2.5) \pm \sqrt{5}}{2} = \frac{2.5 \pm \sqrt{5}}{2}$	الف 2 3 1
$x^2 - 3x - 2 = 0$ $S = x_1 + x_2 = -\frac{b}{a} = -\frac{-3}{1} = 3$ $P = x_1 \times x_2 = \frac{c}{a} = \frac{-2}{1} = -2$	الف 3 -2
$\begin{pmatrix} 1 \\ 2 \end{pmatrix} + \begin{pmatrix} 3 \\ 4 \end{pmatrix} = \begin{pmatrix} 1+3 \\ 2+4 \end{pmatrix} = \begin{pmatrix} 4 \\ 6 \end{pmatrix}$ $\begin{pmatrix} 3 \\ 4 \end{pmatrix} - \begin{pmatrix} 1 \\ 2 \end{pmatrix} = \begin{pmatrix} 3-1 \\ 4-2 \end{pmatrix} = \begin{pmatrix} 2 \\ 2 \end{pmatrix}$	الف 4 6 2 2