

الف) $x^2 - 4x + 8 = 0$ $x^2 - 4x + 9 = 0$ $(x-3)^2 = 0$ $x = 3, 2$

ب) $x^2 + 8x + 17 = 0$ $x^2 + 8x + 19 = 9$ $(x+4)^2 = 9$ $x = -1, -7$

الف) $x^2 - 5x + 4 = 0$ $(x-2)(x-3) = 0$ $x = 2, x = 3$

ب) $x^2 - 5x - 14 = 0$ $(x-7)(x+2) = 0$ $x = 7, x = -2$

الف) $x^2 - 3x - 5 = 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $\Delta = 9 + 20 = 29$ $x = \frac{3 \pm \sqrt{29}}{2}$

ب) $2x^2 - 4x + \frac{1}{2} = 0$ $\Delta = 16 - 4 = 12$ $x = \frac{4 \pm \sqrt{12}}{4} = \frac{1 \pm \sqrt{3}}{1}$ $x = \frac{4 \pm \sqrt{12}}{4}$

الف) $x^2 - 3x + 2 = 0$ $a+b+c=0$ $x=1$ $x = \frac{c}{a} = 2$

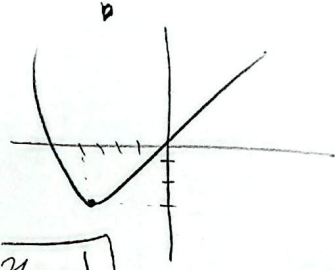
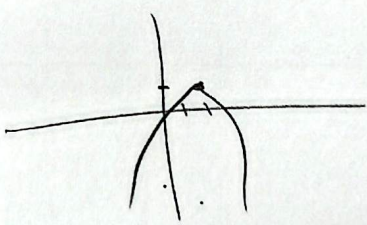
ب) $4x^2 + x - 3 = 0$ $x^2 + x - 12 = 0$ $(x+4)(x-3) = 0$ $x = -4, x = 3$

الف) $x^2 - 12x + 17 = 0$ $x^2 - 12x + 36 = 0$ $(x-6)(x-6) = 0$

$x = \frac{36}{36} = 1$ $x = \frac{17}{36}$

ب) $3x^2 - 10x + 7 = 0$ $x^2 - 10x + 21 = 0$

$(x-3)(x-7) = 0$ $x = \frac{21}{3} = 7$ $x = \frac{7}{3}$

الف) $\Delta = b^2 - 4ac$ $\begin{cases} \Delta > 0 \\ \Delta = 0 \\ \Delta < 0 \end{cases}$ $\begin{cases} (2, 2) \\ (1, 1) \\ (0, 0) \end{cases}$ الف) $25 - 12 > 0$ $\rightarrow (2, 2)$ ب) $1 - 12 < 0$ $\rightarrow (0, 0)$ $\rightarrow 14 - 14 = 0$ $\rightarrow (1, 1)$ $\rightarrow 1 - 12 < 0$ $\rightarrow (0, 0)$	9
$\Delta = b^2 - 4ac$ $2x^2 - 3x + a = 0 \rightarrow (-3)^2 - 4(2)(a) = 9 - 8a$ الف) $9 - 8a > 0$ $8a < 9$ $\boxed{a < \frac{9}{8}}$ $\rightarrow 9 - 8a \geq 0$ $9 \geq 8a$ $\rightarrow 9 - 8a = 0$ $8a = 9$ $\boxed{a = \frac{9}{8}}$ $\boxed{\frac{9}{8} \geq a}$ ج) $9 - 8a < 0$ $9 < 8a$ $\boxed{a > \frac{9}{8}}$	9
$\min \leftarrow y = x^2 + 4x + 5$ الف) $\frac{-b}{2a}$ $\begin{vmatrix} -3 \\ -4 \end{vmatrix}$ $\rightarrow y = x^2 + 4x + 5 \rightarrow (x+2)(x+1) = y \rightarrow \begin{cases} x = -1 \\ x = -5 \end{cases}$ 	1
الف) $\frac{-b}{2a}$ $y = -x^2 + 4x - 3$ $\begin{vmatrix} 2 \\ 1 \end{vmatrix}$ $\rightarrow y = -x^2 + 4x - 3 \rightarrow y = x^2 + 4x + 3$ $y = (x+1)(x+3) \rightarrow \begin{cases} x = -3 = -3 \\ x = -1 = -1 \end{cases}$ 	9
$x^2 - 3x - 2 = 0$ $S = \frac{-b}{a} = \frac{-(-3)}{1} = 3$ $\rightarrow 3^2 - 3(-2) = 15$ $P = \frac{c}{a} = \frac{-2}{1} = -2$ $\rightarrow 3^2 - 3(3)(-2) = 27 + 18 = 45$	10