

$$\text{الف) } \underbrace{x^2 - 4x + 8}_{+1} = \underbrace{0}_{+1} \rightarrow x^2 - 4x + 9 = 1 \rightarrow \text{جزر} \rightarrow x - 3 = \pm 1$$

$$(x - 3)^2 = 1$$

ب) $x^2 + 11x + 17 = 0$

$(x - 1)^2 =$

الف) $x^2 - 5x + 4 = 0$

$(x - 1)(x - 4)$

$x \begin{matrix} \nearrow 1 \\ \searrow 4 \end{matrix}$

ب) $x^2 - 5x - 14 = 0$

$(x - 7)(x + 2)$

$x \begin{matrix} \nearrow 7 \\ \searrow -2 \end{matrix}$

الف) $x^2 - 3x - 5 = 0$

$\frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{-(-3) \pm \sqrt{9 + 20}}{2} = \frac{3 \pm \sqrt{29}}{2}$

ب) $2x^2 - 4x + \frac{1}{2} = 0$

$\frac{-14 \pm \sqrt{14^2 - 4}}{4} = \frac{-14 \pm \sqrt{196 - 4}}{4} = \frac{-14 \pm \sqrt{192}}{4}$

الف) $2x^2 - 3x + 1 = 0$

$x \begin{matrix} \nearrow 1 \\ \searrow -\frac{1}{2} \end{matrix}$

ب) $4x^2 + 11x - 3 = 0$

$x \begin{matrix} \nearrow -1 \\ \searrow +\frac{3}{4} \end{matrix}$

الف) $5x^2 - 12x + 7 = 0$

$x^2 - 12x + 35 = 0$

$(x - 5)(x - 7)$

$x \begin{matrix} \nearrow \frac{7}{5} \\ \searrow \frac{5}{5} = 1 \end{matrix}$

ب) $3x^2 - 10x + 7 = 0$

$x^2 - 10x + 21 = 0$

$(x - 3)(x - 7)$

$x \begin{matrix} \nearrow \frac{7}{3} \\ \searrow 1 \end{matrix}$

$$-b' + \sqrt{\Delta} > b' - 2ac$$

$$1.4100$$

$$\Delta = 0 \quad \Delta < 0$$

$$الف) -x^2 + 5x - 1 = 0$$

$$b^2 - 4ac \rightarrow 25 - 12 = 13$$

دو جواب دارد

$$ب) 2x^2 - x + 1 = 0$$

$$1 - 16 = -15$$

جواب ندارد

$$پ) 2x^2 - 4x + 2 = 0$$

$$16 - 16 = 0$$

$$ت) 2x^2 - x + 1 = 0$$

$$1 - 8 = -7$$

جواب ندارد

$$2x^2 - 3x + a = 0$$

$$b^2 - 4ac$$

$$الف) 9 - 4(2)(a) > 0$$

$$a < \frac{9}{8}$$

$$ب) 9 - 4(2)(a) = 0$$

$$a = \frac{9}{8}$$

$$ج) 9 - 4(2)(a) < 0$$

$$a > \frac{9}{8}$$

$$د) a \leq \frac{9}{8}$$

$$y = x^2 + 4x + 5$$

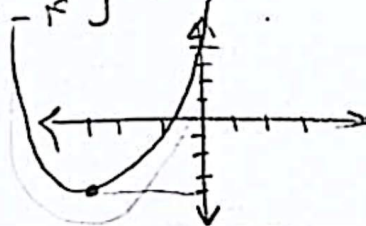
$$-\frac{\Delta}{4a}$$

$$-\frac{b}{2a}$$

$$x = -\frac{4}{2} = -2$$

$$y = \frac{16 - 16}{4} = -1$$

$$\begin{cases} \text{نقطه } x = -2 \\ \text{نقطه } y = -1 \end{cases} \rightarrow \min$$



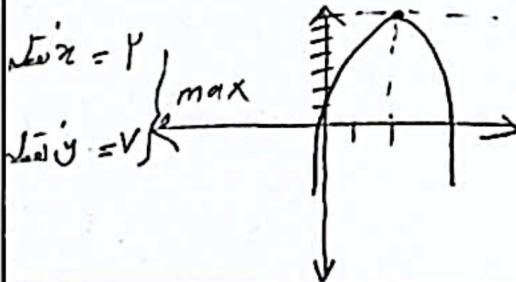
$$y = -x^2 + 4x - 2$$

$$-\frac{\Delta}{4a}$$

$$-\frac{b}{2a}$$

$$-\frac{4}{-2}$$

$$-\frac{16 - 16}{-4} = 0$$



$$x^2 - 3x - 2 = 0$$

$$x^2 - 3x - 2 = 0$$

$$S \rightarrow \text{ریشه ها}$$

$$P \rightarrow \text{ضرب ریشه ها}$$

$$الف) S^2 - 2P$$

$$\frac{-9 - \sqrt{9 + 4}}{2}$$

$$ب) S^2 - 3SP$$

$$\frac{-9 + \sqrt{9 + 4}}{2}$$