

$$\frac{-\Delta}{\epsilon a} = v \Rightarrow \frac{-(b^2 - \epsilon(-1)(3))}{\epsilon} = v \Rightarrow b^2 + 12 = 28$$

$$\Rightarrow b^2 = \frac{28 - 12}{12} \quad b = \frac{7}{3} \quad y = -x^2 + \epsilon x + 3 \Rightarrow \Delta > 0$$

$$y = -x^2 - \epsilon x + 3 \Rightarrow \Delta > 0$$

الف) $x^2 = t$

$$\Rightarrow t^2 + 2t + 2 = 0 \quad \epsilon - \epsilon(1)(2) < 0 \Rightarrow \Delta < 0$$

ب) $(x - x^2) = t$

$$\Rightarrow t^2 - 2t - 10 = 0 \Rightarrow (t + 2)(t - 5) = 0 \Rightarrow t = -2 \text{ یا } 5$$

ع ۵۵۵
ع ۲۵۵

$\epsilon - x^2 = 0 \quad x^2 = -10$
 $\epsilon - x^2 = -2 \quad x^2 = 2$
 $x = \pm \sqrt{2}$

$$|\alpha - \beta| = 2$$

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|\alpha|} = \frac{\sqrt{(12)^2 - \epsilon(\epsilon)(3)}}{\epsilon} = 2$$

$$\sqrt{144 - 12\epsilon} = 2\epsilon \quad ()^2 \rightarrow 144 - 12\epsilon = 4\epsilon^2 \Rightarrow 12\epsilon = 144 \Rightarrow \epsilon = 12$$

$$\beta = \alpha + 1 \quad S = 2\alpha + 2 = \epsilon \quad 2\alpha = \epsilon - 2 \Rightarrow \alpha = 1 \Rightarrow \beta = 1 + 1 = 2$$

$\epsilon x^2 - 12x + 12 = 0$
 $(12)^2 - \epsilon(\epsilon)(12) > 0$
 $\Delta > 0$

$$\beta = 2\alpha - \epsilon \quad S = \frac{-b}{a} = \frac{2}{1} = 2$$

$$\alpha + \beta = \alpha + 2\alpha - \epsilon = 3\alpha - \epsilon = 2 \Rightarrow 3\alpha = 2 + \epsilon \Rightarrow \alpha = 2$$

$$\beta = 2(2) - \epsilon = 0$$

$$P = \alpha \cdot \beta = 2 \times 0 = 0 \Rightarrow P = \frac{c}{a} = 0 \Rightarrow \frac{m-1}{1} = 0 \Rightarrow m-1=0 \Rightarrow m=1$$

$$3x^2 - 4x = 0 \Rightarrow 34 - \epsilon(2)(10) > 0 \Rightarrow \Delta > 0$$

$$\alpha = \frac{1}{\beta} \quad P = \alpha \cdot \beta = \frac{c}{a} \quad P = \frac{1}{\beta} \times \beta = 1$$

$$\frac{m^2 - 2}{-m} = 1 \Rightarrow m^2 - 2 = -m \Rightarrow m^2 + m - 2 = 0 \Rightarrow \Delta = 1 - \epsilon(1)(-2) > 0$$

$$\Rightarrow \frac{-1+2}{2} = \frac{1}{2} \quad \frac{-1-2}{2} = \frac{-3}{2}$$

دارای دو ریشه است
ع ۵۵۵
ع ۲۵۵

$\Delta > 0$
 $m=1 \quad -x^2 + \epsilon x - 1 = 0$
 $m=-2 \quad 2x^2 + \epsilon x + 2 = 0$

$$(2 - \epsilon(2)(2)) > 0$$

$$\Delta > 0$$

$$n^2 - 2n + 1 = 0 \quad P = \frac{c}{a} = 1$$

$$\alpha \beta = c \quad \beta(\alpha \beta) = c \quad \beta = \frac{c}{\alpha} \Rightarrow \frac{c}{\alpha} \times \frac{c}{\alpha} \times \alpha = c \Rightarrow \alpha = \frac{c}{\beta}$$

$$S = \alpha + \beta = -\frac{b}{a} \Rightarrow \frac{m}{1} = m \Rightarrow \frac{9 \times 1}{1} + \frac{1 \times 1}{1} = \frac{10}{1}$$

$$b = -\frac{c^2}{12} \quad n^2 - \frac{c^2}{12}n + 1 = 0 \Rightarrow \left(-\frac{c^2}{12}\right)^2 - 4(1)(1) > 0$$

$$\alpha = 3\beta$$

$$\Delta > 0$$

$$S = \alpha + \beta = 3\beta + \beta = 4\beta \Rightarrow S = -\frac{b}{a} = 10 \Rightarrow 4\beta = 10$$

$$\Rightarrow \beta = \frac{5}{2} \Rightarrow \alpha = 3\beta = \frac{15}{2}$$

$$P = \alpha \cdot \beta = \frac{15}{2} \times \frac{5}{2} = \frac{75}{4} \quad P = \frac{c}{a} = 1 \Rightarrow \frac{m}{1} = 1 \Rightarrow m = 1$$

$$n^2 - 2n + 1 = 0 \Rightarrow 12 - 4(1)(1) > 0 \Rightarrow \Delta > 0$$

$$\alpha^2 + \frac{1}{\alpha^2} \Rightarrow \left(\alpha + \frac{1}{\alpha}\right)\left(\alpha^2 + \frac{1}{\alpha^2} - 2\right)$$

$$\Rightarrow S = -\frac{b}{a} = 10 \quad P = \frac{c}{a} = 1 \Rightarrow \alpha = \frac{1}{\beta}, \beta = \frac{1}{\alpha}$$

$$(\alpha + \beta)(\alpha^2 + \beta^2 - 2) = (S)(S^2 - 2P - 2) = (10)(100 - 2 - 2) = 96$$

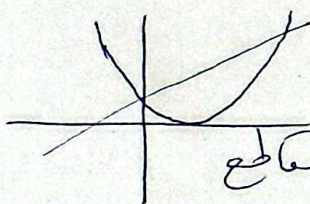
$$h_{\max} - \frac{\Delta}{4a} = -\frac{((0.0)^2 - 4(-1.0)(0.0))}{4(-1.0)} = \frac{-2(0.0 + 0)}{-4.0} = \frac{0}{4.0}$$

$$= 0 \Rightarrow -1.0t^2 + 0.0t - 4.0 = 0$$

$$\rightarrow -1.0t^2 + 0.0t = 0 \Rightarrow t^2 - 0t = 0 \Rightarrow (t)(t - 0) = 0$$

$$t = 0 \quad \text{أو} \quad t = 0$$

الف)



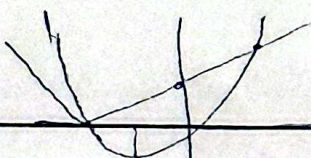
د نقطتا قطع

$$(n-1)^2 = 2n+1 \Rightarrow n^2 - 2n = 0$$

$$\Rightarrow (n)(n-2) = 0 \quad n = 0, 2$$

$$\Rightarrow \begin{bmatrix} 2 \\ 1 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \end{bmatrix}$$

ب)



د نقطتا قطع

$$n^2 + 2n = (n+1)^2$$

$$n \geq 1 \quad n^2 + 2n - 1 = 0 \quad n = \frac{-2 \pm \sqrt{4 + 4}}{2} = -1 \pm \sqrt{2}$$

$$n < 1 \quad n^2 + 2n + 1 = 0 \quad n = -1 \pm \sqrt{0} = -1$$

$$\Rightarrow \begin{bmatrix} 1 \\ 1 \end{bmatrix}, \begin{bmatrix} -1 \\ 1 \end{bmatrix}$$