

$$y: -x^2 + bx = 3$$

(سوال ۱)

$$\frac{-\Delta}{\epsilon a} = v \rightarrow \frac{-b^2 + 12}{-4} = v \rightarrow b^2 + 12 \rightarrow \boxed{b = \pm 4}$$

$$\text{الف) } f(x) = x^2 + 2x^2 + 3$$

(سوال ۲)

$$\Rightarrow x^2 + 2x^2 + 3 \xrightarrow{x=t} t^2 + 2t + 3 = 0$$

$$\Delta = 4 - 12 = -8 < 0 \quad \text{ریشه نامرئی ندارد} \quad \epsilon - 12 = -8 \leftarrow b^2 - 4ac$$

$$\text{ب) } f(x) = (x - x^2)^2 - 2(\epsilon - x^2) - 15 = 0$$

$$\xrightarrow{x=t} t^2 - 2t - 15 = (t - 5)(t + 3) = 0$$

$$t = 5 \rightarrow \epsilon - x^2 = 5 \rightarrow x^2 = -1 \rightarrow x$$

$$t = -3 \rightarrow \epsilon - x^2 = -3 \rightarrow x^2 = 2 \rightarrow x = \pm \sqrt{2}$$

$$\epsilon x^2 - 14x + m = 0$$

(سوال ۳)

$$\alpha + \beta = \frac{14}{\epsilon} = 4 \rightarrow \frac{-b}{a}$$

$$\alpha = \beta + 2 \rightarrow \beta + 2 + \beta = 4 \rightarrow 2\beta = 2 \rightarrow \beta = 1, \alpha = 3$$

$$P = \frac{m}{k} \rightarrow 3 \times 1 = \frac{m}{\epsilon} \rightarrow \boxed{m = 12}$$

$$\epsilon x^2 - 14x + 12 = 0 \rightarrow \boxed{\Delta > 0}$$

$$3m^2 - 4m + m - 1 = 0 \quad 2\alpha - \beta = 4 \quad \text{سوال (ع)}$$

$$\frac{1}{4}(\alpha + \beta) + \frac{3}{4}(\alpha - \beta) = 4 \quad \frac{1}{4}\alpha + \frac{1}{4}\beta + \frac{3}{4}\alpha - \frac{3}{4}\beta = 4$$

$$\rightarrow \alpha - \beta = 2$$

$$\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} \Rightarrow \frac{\sqrt{34 - 12(m-1)}}{4} = 2 \quad \text{تكون}$$

$$34 - 12(m-1) = 34 \rightarrow m-1 = 0 \quad \boxed{m=1}$$

$$-m\alpha^2 + 4\alpha + m^2 - 2 = 0 \quad \text{سوال (د)}$$

$$\Delta > 0 \rightarrow 16 - 4(-m)(m^2 - 2) > 0 \quad 16 + 4m^3 - 8m > 0$$

$$p \geq 1 \rightarrow \frac{m^2 - 2}{-m} = 1 \rightarrow m^2 + m - 2 = 0$$

$$(m+2)(m-1) = 0$$

$$\boxed{m=1} \quad \Delta > 0 \checkmark$$

$$\boxed{m=-2} \quad \text{غقون} \quad \Delta < 0 \times$$

سوال (ف)

$$\alpha^2 - m\alpha + 3 = 0$$

$$\alpha\beta = 3 \rightarrow (\alpha\beta)(\beta) = 3 \rightarrow \beta = \frac{3}{\alpha}$$

$$\alpha = \frac{4}{3}$$

$$m = \frac{4}{3} = \frac{4}{3} = \frac{4}{3} = \frac{4}{3} \rightarrow \alpha^2 - \frac{4}{3}\alpha + 3 = 0 \rightarrow \Delta > 0 \checkmark$$

$$m^2 = \epsilon m + m^2 \quad m = \alpha\beta \rightarrow 1 \times 2^2 \quad (\text{سوال ٧})$$

$$\alpha + \beta = \epsilon \quad \alpha = \epsilon\beta \quad \epsilon\beta = \epsilon \rightarrow \beta = 1$$

$$\alpha = 2$$

$$m^2 = \epsilon m + 2 \rightarrow \Delta > 0 \quad \checkmark$$

$$m^2 = \sqrt{2} + 2 \quad \alpha^2 + \frac{1}{\alpha^2} \quad (\text{سوال ٨})$$

$$\alpha^2 - 2 + \frac{\epsilon}{\alpha^2} \Rightarrow \left(\alpha + \frac{\epsilon}{\alpha} \right)^2 - 4 + \epsilon - 4 = \epsilon^2$$

$$\left(\alpha^2 + \frac{1}{\alpha^2} \right) \Rightarrow \left(\alpha + \frac{\epsilon}{\alpha} \right) \left(\alpha^2 - 2 + \frac{\epsilon}{\alpha^2} \right) = 3 \quad 10$$

$$\alpha + \frac{\epsilon}{\alpha} \Rightarrow \frac{\alpha^2 + \epsilon}{\alpha} = \frac{\sqrt{2} - 2 + \epsilon}{\alpha} = \sqrt{2} \quad \alpha^2 = \sqrt{2} \quad \checkmark$$

$$\alpha^2 + \frac{\epsilon}{\alpha^2} \leftarrow \alpha^2 = \sqrt{2} \quad \left(\alpha + \frac{\epsilon}{\alpha} \right)^2$$

$$h(t) = -1 \cdot t^2 + 0 \cdot t \quad \left\{ \begin{array}{l} \frac{-0}{-2} = 0 \rightarrow t \quad (\text{سوال ٩}) \\ -1 \cdot \left(\frac{0}{2} \right) + 0 \cdot \left(\frac{0}{2} \right) \rightarrow \frac{0}{2} \end{array} \right.$$

h

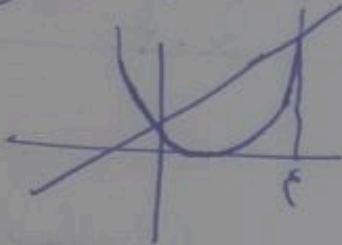
Subject:

Date:

اف) $(n-1)^2 = 2n+1$

نظري (10)

$$\frac{n}{y} \mid \begin{matrix} 0 \\ 1 \end{matrix} \quad \begin{matrix} -1 \\ 1 \end{matrix}$$



$$n^2 - 2n + 1 = 2n + 1$$

$$n^2 - 4n = 0 \rightarrow n(n-4) = 0$$

• 4

$$n^2 + n - 2 = 0 \quad n = 1, -2$$

ب) $n^2 + 4n = |n+2| \rightarrow n+2 = n^2 + 4n$
 $n(n+4)$ $n+2 = -n^2 - 4n$

$$n^2 + 5n + 2 = 0 \rightarrow n = -2, -1$$

عزق