

$$\min, \max = \frac{-\Delta}{2a} \quad \max = \frac{-(b^2 + 12)}{-4} = \frac{b^2 + 12}{4} = \sqrt{\quad}$$

$$b^2 + 12 = 21 \rightarrow b^2 = 9 \rightarrow \boxed{b = \pm 3}$$

الف) $f(n) = n^2 + 2n^2 + 3 \rightarrow n^2 = t \quad \Delta < 0 \rightarrow$ معادله قطب ندارد

ب) $f(n) = (2 - n^2)^2 - 2(2 - n^2) - 1 = 0 \quad (2 - n^2) = t$

ج) $t^2 - 2t + 1 = 0 \quad (t - 1)(t + 1) = 0 \quad t = 1$
 $t = -1$

$t = 1 \rightarrow -n^2 + 2 = 0 \rightarrow -n^2 + 1 = 0 \rightarrow n^2 + 1 = 0$ قطب ندارد

$t = -1 \rightarrow -n^2 + 2 = -1 \rightarrow -n^2 + 3 = 0 \rightarrow n^2 = 3 \rightarrow \boxed{n = \pm \sqrt{3}}$

د) $\alpha, \beta = \alpha + 2 \rightarrow \alpha + \beta = \alpha + \alpha + 2 = 2\alpha + 2 = 5 \rightarrow 2\alpha = 3 \rightarrow \alpha = 1.5$
 $\beta = \alpha + 2 \rightarrow \beta = 3.5$

ه) $\alpha, \beta = 3 \rightarrow \frac{m}{2} = 3 \Rightarrow m = 6$

$2\alpha = 5 + \beta \Rightarrow \alpha = \frac{\beta + 5}{2}$

$\alpha + \beta = 5 \rightarrow \beta + \frac{\beta + 5}{2} = \frac{2\beta + 5}{2} = 5 \Rightarrow 2\beta + 5 = 10 \Rightarrow 2\beta = 5 \Rightarrow \beta = 2.5$

$\alpha + \beta = 5 \rightarrow \beta = 0 \rightarrow \alpha = 5$

و) $\alpha, \beta = 0 \rightarrow \frac{m-1}{2} = 0 \rightarrow \boxed{m = 1}$

$$\frac{m^2 - r}{-m} = 1 \Rightarrow m^2 - r = -m \rightarrow m^2 + m - r = 0 \rightarrow m = -\frac{1}{2} \pm \frac{\sqrt{1+4r}}{2}$$

(a) $\alpha\beta=1 \leftarrow$ من خواص دلتا

$$\Delta > 0 \rightarrow 14 + 4(m)(m^2 - r) > 0 \rightarrow 14 + 4m^3 - 4mr > 0$$

$$\Rightarrow 4m^3 - 4mr + 14 > 0 \div 2 \rightarrow m^3 - rm + 7 > 0$$

(ب)

$$m=1 \rightarrow 1 - r + 7 > 0 \checkmark \rightarrow m = -r \rightarrow -1 + 7 + 7 = 13 > 0$$

$$\Rightarrow m=1 \quad \alpha\beta = r \quad \alpha\beta^r = r$$

(c)

$$\frac{\alpha\beta^r}{\alpha\beta} = \beta = \frac{r}{r} \rightarrow \alpha\beta = r \rightarrow \frac{r}{r}\alpha = r \rightarrow \alpha = r \times \frac{r}{r} = r$$

(د) $1, 1, 0$

$$\alpha + \beta = \frac{r}{r} + \frac{r}{r} = \frac{r+r}{r} = \frac{2r}{r} \rightarrow m = +\frac{2r}{r}$$

$$\left. \begin{array}{l} \alpha \\ \beta = r\alpha \end{array} \right\} \begin{array}{l} \alpha + \beta = r \rightarrow \alpha + r\alpha = r \rightarrow r\alpha = r \rightarrow \alpha = 1 \\ \beta = r\alpha \rightarrow \beta = r \end{array}$$

(هـ) $1, 1, 0$

$$m = \alpha\beta = 1 \times r = r$$

$$\alpha\beta = r \rightarrow \beta = \frac{r}{\alpha} \xrightarrow{\alpha=1} \beta = r$$

(و) 1

$$\rightarrow \alpha^r + \frac{1}{\alpha^r} = \alpha^r + \beta^r = S^r - rSP = 4 \times 1 - 2 \times 1 \times r$$

(ز) 5

$$= \underbrace{V(4 - r)}_{4-r} = 4 - r$$

ایضاح

$$man \rightarrow h(\omega) = -\log t + \omega \cdot t \rightarrow \frac{b}{r\alpha} = \frac{-\omega_0}{-r\omega_0} = \frac{\omega}{r}$$

$$-\log\left(\frac{\omega}{r}\right)^r + \omega_0\left(\frac{\omega}{r}\right) = \frac{-r\omega_0}{r} + \frac{r\omega_0}{r} = \frac{r\omega_0}{r} = \omega_0$$

$$-\log t + \omega_0 t = 0 \quad t(-\log t + \omega_0) = 0$$

(ح) 5

$$(الف) (n-1)^2 = 2n + 1$$

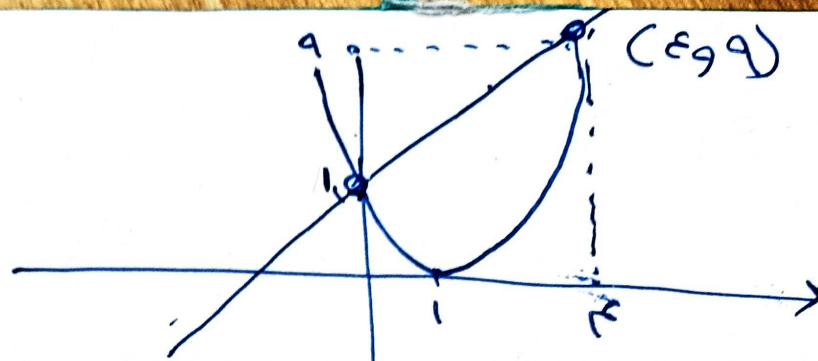
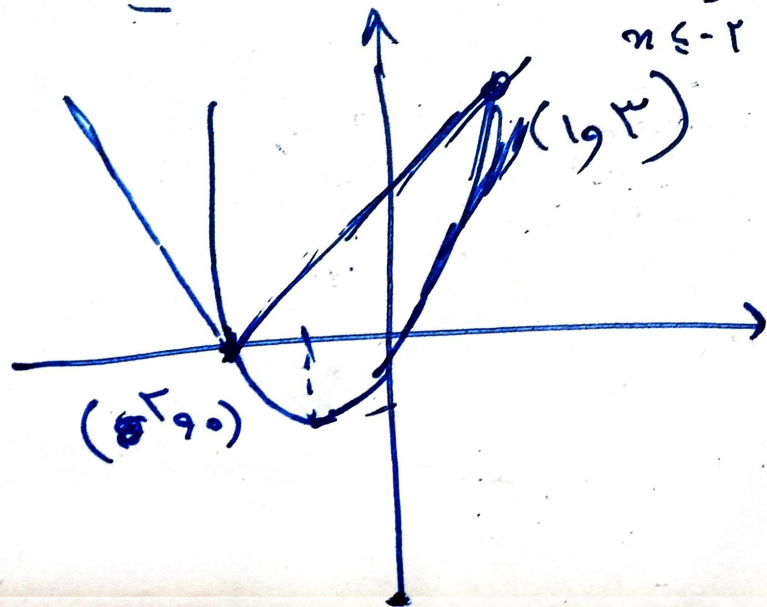
$$n^2 - 2n + 1 = 2n + 1$$

$$n^2 - 4n = 0$$

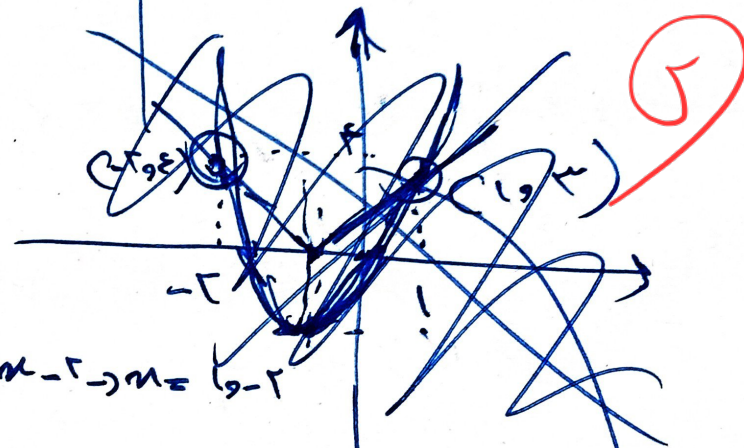
$$n(n-4) = 0$$

$$ب) n^2 + 2n = |n+2|$$

$$n^2 + 2n = |n+2|$$



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$$n \geq -2$$

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

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

شروط
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تسعة