

بازدهم خند A

سایه سید محمدری

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

-۱

$$\max = 7 \Rightarrow \frac{-\Delta}{2a} = 7 \Rightarrow \frac{-b^2 + 4ac}{2a} = 7$$

$$-b^2 - 12 = -28 \Rightarrow -b^2 + 16 = 0 \Rightarrow b^2 = 16$$

$$\Rightarrow b = \pm 4$$

-۲

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

$$x^2 = t \Rightarrow t^2 + 2t + 3$$

$$\Delta < 0 \Rightarrow \text{فصلی ندارد}$$

$$f(x) = (x - \alpha)^2 - 2(\alpha - x) - 1 \quad \text{ب}$$

$$\Rightarrow t^2 - 2t - 1 \Rightarrow (t - \alpha)(t + 3) \Rightarrow t = \alpha \quad t = -3$$

$$\Rightarrow x - x^2 = \alpha \Rightarrow x^2 + 1 = 0 \Rightarrow x^2 = -1 \quad \text{خوب نیست}$$

$$x - x^2 = -3 \Rightarrow x^2 - 4 = 0 \Rightarrow x^2 = 4 \Rightarrow x = \pm 2$$

-۳

$$5x^2 - 14x + m = 0$$

$$\alpha + 2 = \beta \Rightarrow S = \alpha + \beta = 2\alpha + 2$$

$$S = \frac{-b}{a} = \frac{14}{5} = 2.8 \quad 2\alpha + 2 = 2.8 \Rightarrow \alpha = 0.4$$

$$\alpha = 1, \beta = 3 \Rightarrow P = \alpha \cdot \beta = \frac{c}{a} = 3 \Rightarrow \frac{m}{5} = 3$$

$$\Rightarrow m = 15$$

$$r n^r - 4n + m - 1 = 0$$

$$r\alpha - \beta = \varepsilon$$

-2

$$\alpha + \beta = r\alpha - \varepsilon$$

$$\Rightarrow \beta = r\alpha - \varepsilon$$

$$\alpha + \beta = \frac{-(-4)}{r} = r \Rightarrow r\alpha - \varepsilon = r \Rightarrow \alpha = r$$

$$\boxed{\alpha = r}$$

$$\boxed{\beta = 0}$$

$$\Rightarrow \alpha \cdot \beta = 0 \Rightarrow \frac{m-1}{r} = 0$$

$$\Rightarrow \boxed{m = 1}$$

-3

$$-m n^r + 2n + m^r - r = 0$$

$$\alpha \cdot \beta = 1 \quad (= \text{cycles})$$

$$\Rightarrow \frac{c}{a} = \frac{m^r - r}{-m} = 1 \Rightarrow m^r + m - r = 0$$

$$(m + r)(m - 1) = 0 \Rightarrow m = -r \quad \text{X} \quad , \quad m = 1 \quad \checkmark$$

$$\text{if } m = -r \Rightarrow r n^r + 2n + r = (\sqrt{r}n + \sqrt{r}) \Rightarrow 1 \text{ minimum value}$$

$$\text{if } m = 1 \Rightarrow -n^r + 2n - 1 \Rightarrow \Delta > 0 \Rightarrow \checkmark \quad \boxed{m = 1}$$

-4

$$n^r - m n + r = 0$$

$$\alpha \beta^r = \varepsilon$$

$$\alpha \cdot \beta = r \Rightarrow (\underbrace{\alpha \beta}_r) \beta = \varepsilon \Rightarrow \beta = \frac{\varepsilon}{r} \quad , \quad \alpha = \frac{r}{\varepsilon}$$

$$\Rightarrow \alpha + \beta = \frac{r}{\varepsilon} + \frac{\varepsilon}{r} = \frac{r^2 + \varepsilon^2}{r\varepsilon} = \frac{\Sigma r}{r\varepsilon}$$

$$\frac{-(-m)}{1} = \boxed{\frac{\Sigma r}{r\varepsilon}} = m$$

$$m^2 - \varepsilon m + m = 0$$

-V

$$\alpha = \alpha, \beta = \alpha \Rightarrow \alpha + \beta = \varepsilon \alpha = \frac{-(-\varepsilon)}{1} \Rightarrow \alpha = 1$$

$$\alpha = 1, \beta = \alpha \Rightarrow \alpha \cdot \beta = \alpha \Rightarrow \frac{m}{1} = \alpha \Rightarrow m = \alpha$$

-A

$$m^2 - \nu m + \nu = 0$$

$$\alpha^2 + \frac{\Lambda}{\alpha^2}$$

$$\alpha \cdot \beta = \nu \Rightarrow \beta = \frac{\nu}{\alpha} \Rightarrow \frac{\Lambda}{\alpha^2} = \beta^2$$

$$\Rightarrow \alpha^2 + \beta^2 = (\alpha + \beta) \cdot (\alpha^2 + \beta^2 - \alpha\beta) = \nu \times \varepsilon \nu = \frac{\nu^2}{\varepsilon}$$

$$\Rightarrow \alpha + \beta = \nu$$

$$\alpha^2 + \beta^2 = S^2 - 2P = \varepsilon^2 - 2(\nu) = \varepsilon^2$$

-9

$$h(t) = \gamma t^2 + \omega t$$

$$b) h(t) = 0 \Rightarrow t(-\gamma t + \omega) = 0 \Rightarrow t = 0 \times$$

في $t = \omega$

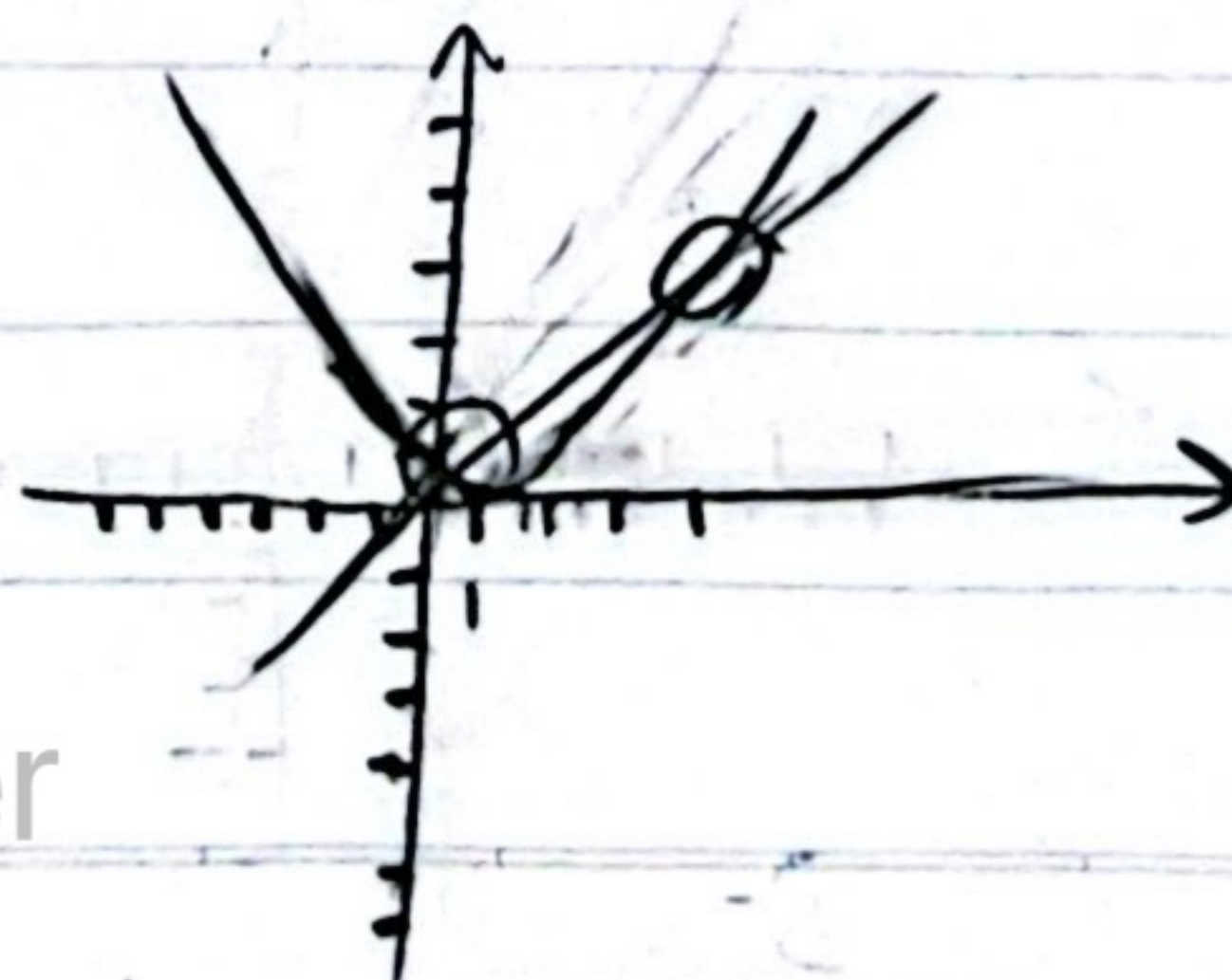
$$c) h_{\max} = \frac{-\Delta}{\varepsilon \alpha} = \frac{-b^2 + \frac{\omega^2}{\varepsilon}}{\varepsilon \alpha} = \frac{-\frac{\omega^2}{\varepsilon}}{-\varepsilon \alpha} = \frac{\omega^2}{\varepsilon^2 \alpha}$$

$$d) (n-1)^2 = \nu_{n+1}$$

$$m^2 - \nu_{n+1} = \nu_{n+1}$$

$$m^2 - \varepsilon \alpha = 0 \Rightarrow m(m - \varepsilon)$$

$$\Rightarrow m = 0 \quad m = \varepsilon$$

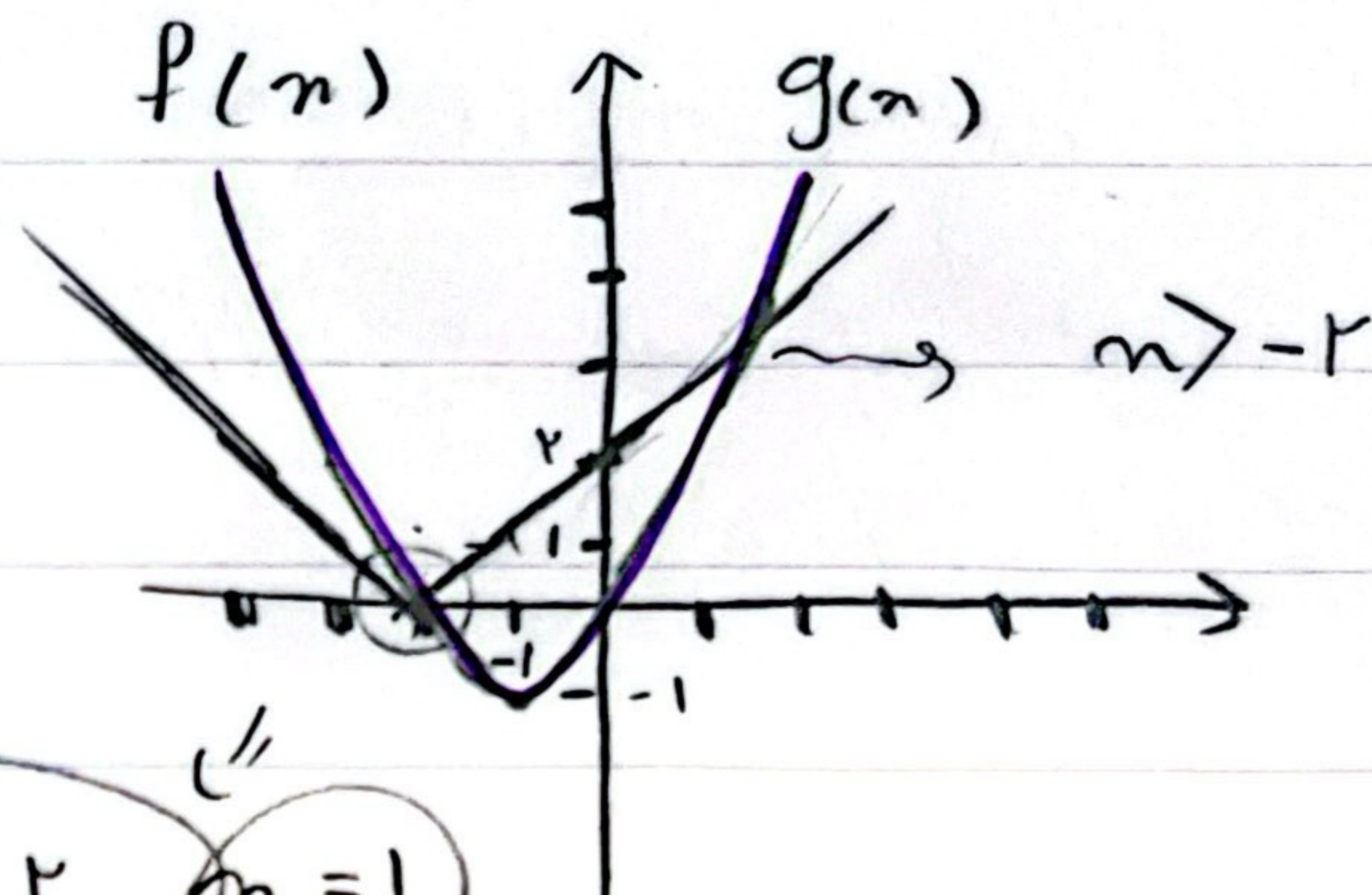


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$$\hookrightarrow n^2 + rn = |n+r|$$

$$f(n) = n^2 + rn$$

$$g(n)$$



$$n_s = \frac{-b}{2a} = \frac{-r}{2} = -1$$

$$n = -1 \quad n = 1$$

$$y_s = 1 - r = -1$$

$$\Rightarrow n^2 + rn = n + r$$

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

$$n = -r \quad n = 1 \quad \checkmark$$