

۲۰. افزین ۱) $g(f(n))$

$\hookrightarrow n \in D_f \Rightarrow f(n) \in D_g \Rightarrow n-1 \geq 1 \Rightarrow n \geq 2$ ①

$\sqrt{-(n^2-4n+5)} \rightarrow$ نقطه $\rightarrow f(n) \in [2, 5] \rightarrow f^{-1} = 2, n-1=2 \Rightarrow n=3$ $\rightarrow$ ~~(1)~~ $\cap$ (5) = $\{1, 5\}$ ②

۳)

$r(n^2-4n+1)-\omega = (r(n-\omega))^2 - r(r(n-\omega)+1) \Rightarrow r(n^2-4n+1)-\omega = r(n^2-2rn+\omega^2)-r(r(n-\omega)+1) + 1$
 $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta \rightarrow \frac{r}{r} \Delta(1) \rightarrow 100 - r(\frac{r\omega}{r}) = 100 - 37 (= 7r)$ $\rightarrow r(n^2 - 2\omega n + \omega^2) =$ ③

۴) $g(f(n)) = \omega n^2 + 11 \Rightarrow g(rn) = \omega n^2 + 11 \Rightarrow g(n) = \omega(\frac{n}{r})^2 + 11 \Rightarrow \frac{\omega}{r} n^2 + 11 \rightarrow g(n-r) =$
 $\omega(\frac{n-r}{r})^2 + 11 \rightarrow \omega(\frac{n^2 + r^2 - 2rn}{r^2}) + 11 \rightarrow$
 $\min \rightarrow$ $\Delta(1) \rightarrow \omega(0) + 11 = 11$ ④

۵)

$f(g(n)) \rightarrow rg - \varepsilon = rn^2 - 4n - 1 \rightarrow rg = rn^2 - 4n + 3, g = n^2 - 4n + 1 \rightarrow g(f(n)) = (rn - \varepsilon)^2 - r(rn - \varepsilon) + 1$
 $\rightarrow (n-1)^2 \rightarrow (rn - \omega)^2 = 4n^2 + 2\omega - r\omega n$ ⑤

۶)

$f-g = -n + \omega$ $g(n) = \frac{r}{r} f(n) - v \Rightarrow -\frac{1}{r} f(n) + \frac{v}{r} = -n + \omega$
 $f(g(n)) = -\frac{r}{r} n + r$ $g(n) = rn - 1$ $-n - r \rightarrow f(n) + rn + \varepsilon$
 $f(g(n)) \rightarrow r(rn - 1) + \varepsilon = 4n + r \Rightarrow -\frac{r}{r} = r \Rightarrow a = -\frac{1}{r}$ ⑥

۷)

$g(f(n)) \rightarrow f_n^{4n} \rightarrow (rn) \geq n^2 \Rightarrow n^2 - rn \leq 0 \Rightarrow n(n-r) \leq 0 \rightarrow \frac{0}{+1-r} + \frac{r}{+1-r} \rightarrow \frac{0}{+1-r} \rightarrow \frac{r}{+1-r} \rightarrow \frac{r}{1-r}$
 $f(g(n)) \rightarrow g \rightarrow (n^2) \rightarrow$ $\rightarrow \frac{r}{1-r}$ ⑦

۸)

$f(n - \frac{r}{n}) \Rightarrow f(1) = 1 + 1^2$
 $\rightarrow \frac{(n - \frac{r}{n})^2}{1} = n^2 + \frac{r^2}{n^2} - \varepsilon \rightarrow \frac{n^2 - \frac{r}{n} + \frac{r}{n}}{1} \Rightarrow f(n) \geq n^2 + n$ ⑧

۹)

$f(g(n)) \rightarrow f_n^{1n-n^2} \rightarrow 1n-n^2$
 $\hookrightarrow n^2 - 1n - r \rightarrow \frac{1}{+1-1} + \frac{r}{+1-1} \Rightarrow A \in (-, A)$ ①
 $\rightarrow f_n^{1n-n^2} \rightarrow -n^2 + 1n \rightarrow -\frac{b}{4a} \rightarrow \frac{-1}{-2} = \frac{1}{2} \rightarrow \frac{1}{2} \in (-1, 1) \rightarrow \cap (-1, 1)$
 $\rightarrow f_n^{[0, 1]} \Rightarrow [-0, \frac{1}{2}] \cap (-1, 1) \rightarrow \cap (-1, 1)$
 $\rightarrow \frac{1}{2} \rightarrow \frac{1}{2} \in (-1, 1) \rightarrow \cap (-1, 1)$ ②

9)

$$h(n) = p(n) = 1 - 3n^2 \rightarrow p(n) = 1 - 3n^2$$

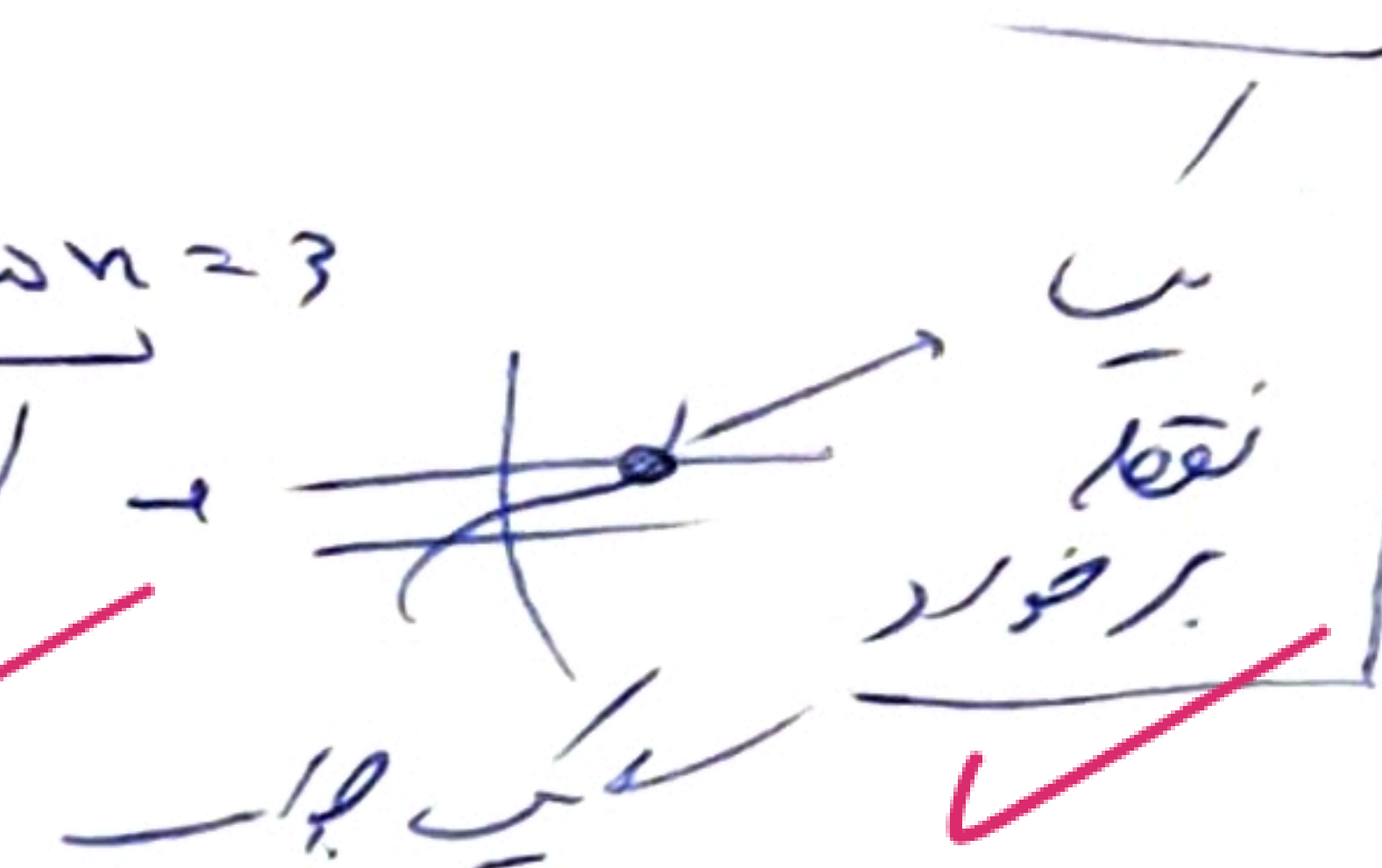
$$h(g(n)) \Rightarrow \frac{(n-1)^3 + 2(n-1) + 1}{n^3 - 1 + 3n - 3n^2 + 2n - 1}$$

$$n^3 - 1 + 3n - 3n^2 + 2n - 1$$

$$\frac{n^3 - 3n^2 + 5n - 2}{n^3 - 3n^2 + 5n - 2} = 1 - 3n^2$$

$$n^3 + 5n - 3 = 0 \rightarrow n^3 + 5n = 3$$

نقطہ
موجود



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10)

$$g(p(n)) = an^3 + 7n \Rightarrow g(3) = 1 \rightarrow a \times 27 + 21$$

$$p(n) = 3 \rightarrow n - \frac{3}{n} = 3 \rightarrow n = 6$$

$$a = 0$$

$$\downarrow n = -1 \Rightarrow -a - 7 = 1 \rightarrow -a = 8 \rightarrow a = -8$$

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