

۲۰ آفرین !!

معلمه ابوظابی

$$f(u) = \sqrt{\log_r^{u-1}} \Rightarrow u-1 > 0 \Rightarrow u > 1$$

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$$g(u) = \sqrt{-(u-2)^2} \Rightarrow \text{تقریباً در این جا} \Rightarrow \text{دایره با مرکز ۲}$$

$$f(u) = 2 \Rightarrow \sqrt{\log_r^{u-1}} = 2 \Rightarrow u-1 = 4 \Rightarrow u = 5$$

$$\log_r^{u-1} = 2 \quad \text{Def} = \{f, v\}$$

$$(2u-1)^2 - 2(2u-1) + 1 = 2(u^2 - 2u + 1) = 2(u-1)^2$$

$$2u^2 - 2u + 1 = 2u^2 - 4u + 4 \Rightarrow 2u^2 - 2u + 1 = 2u^2 - 4u + 4 \Rightarrow 2u = 3 \Rightarrow u = 1.5$$

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$$(2u-1)^2 - 2u = 100 - 2(1.5) = 97$$

$$g(u) = \omega u^2 + 11$$

$$2u = t \Rightarrow u = \frac{t}{2} \Rightarrow \omega \left(\frac{t}{2}\right)^2 + 11 = 5$$

$$g(u) = \frac{\omega}{2} t^2 + 11 \Rightarrow \min_{t \in \mathbb{R}} \Rightarrow \frac{\omega}{2} t^2 + 11 = 5$$

در مستطی از u و t در این
نقطه می باشد

$$\min = 11$$

$$f(t) - 2 = 2u^2 - 4u + 1 \Rightarrow f(t) = 2u^2 - 4u + 3$$

$$g(u) = (u-1)^2 \Rightarrow \text{got} \Rightarrow (2u-1)^2 \Rightarrow \text{got} = (2u-1)^2$$

$$f-g = -u + \omega$$

$$rf - rf = -1 \quad \textcircled{1}$$

$$r(f - g = -u + \omega) \Rightarrow$$

$$+rf - rg = -ru + \omega \quad \textcircled{2}$$

$$\textcircled{1} + \textcircled{2} = -f(u) = -ru - \varepsilon \Rightarrow f(u) = ru + \varepsilon$$

$$ru + \varepsilon - g(u) = -u + \omega \Rightarrow g(u) = ru - 1$$

$$f(g(u)) = r(ru - 1) + \varepsilon = 4u + r$$

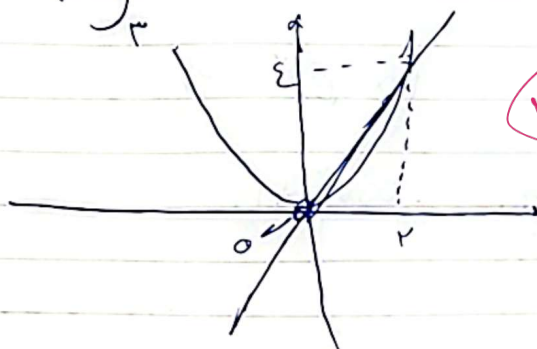
$$a = \frac{1}{r} \quad \leftarrow \quad \text{مقدار } \frac{1}{r}$$

$$f \circ g(u) \leq g \circ f(u) \Rightarrow r(\log_r u) \leq \log_r u$$

$$u^r \leq ru$$

$$[0, r]$$

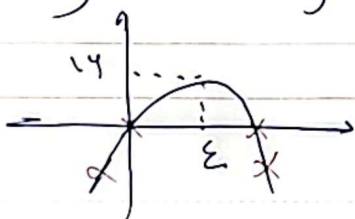
$$0, 1, r \rightarrow \text{نقطه}$$



$$f\left(\frac{u^r - r}{u}\right) = \frac{u^r}{u} + u - \frac{r}{u} - \varepsilon + \frac{\varepsilon}{u} \Rightarrow \left(u - \frac{r}{u}\right) \Rightarrow$$

$$\frac{u^r + \varepsilon}{u^r} - \varepsilon + u - \frac{r}{u} \Rightarrow \frac{1}{u} + u \Rightarrow f(u) = u^r + u$$

$$f \circ g(u) = f(g(u)) = r \log_r g(u) \Rightarrow D = R$$



$$\Rightarrow \frac{1}{u} + u > 0 \Rightarrow D_{f \circ g} = [0, r]$$

$$R_{f \circ g} = (-\infty, r]$$

$$\textcircled{1} \cap \textcircled{2} = [0, \varepsilon]$$

$$\textcircled{2}$$

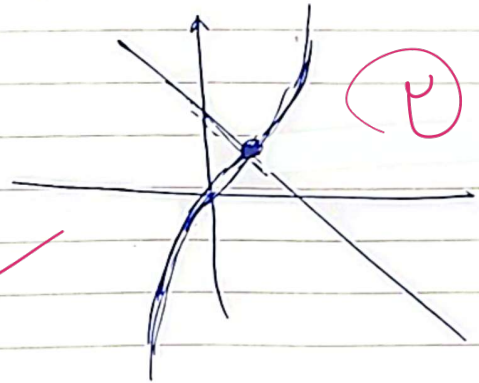
$$f \circ f(u) = 1 - p f(u) \Rightarrow f(u) = 1 - p u^2$$

$$h(g(u)) = f(u) \Rightarrow (u-1)^2 + p(u-1) + 1 = 1 - p u^2$$

$$u^2 - \cancel{p u^2} + \cancel{p u} + \cancel{p u} - \cancel{p} + 1 = \cancel{1} - \cancel{p u^2}$$

$$u^2 = -2pu + p \Rightarrow$$

$$\frac{u}{p} = \frac{-2p u + p}{p}$$



$$f(u) = u - \frac{\varepsilon}{u}$$

$$u - \frac{\varepsilon}{u} = p$$

$$\frac{u^2 - \varepsilon}{u} = p \Rightarrow$$

$$u^2 - p u - \varepsilon = 0$$

$$(u - \varepsilon)(u + 1) \Rightarrow$$

$$u = \varepsilon \quad \therefore \quad \underline{u = -1}$$



$$g \circ f(-1) = -a - p = 1 \Rightarrow$$

$$a = -10$$

$$g \circ f(\varepsilon) = 4a + 1 = 1 \Rightarrow 4\varepsilon a = 0 \Rightarrow \underline{a = 0}$$

$$\boxed{a = -10 \text{ or } 0}$$