

جواب

سؤال 9

$$\lim_{n \rightarrow \infty} \left\{ \begin{array}{ll} \cos \frac{n\pi}{2} & n \leq 1 \\ \frac{1}{n} & n > 1 \end{array} \right.$$

$$1 - \cos \frac{n\pi}{2} = \frac{1}{2}, \cos \frac{n\pi}{2} = \frac{1}{2}$$

$$1 - \cos \geq 1 \rightarrow \sqrt{(1-\cos)^2} = 1 - \cos$$

لو كذا؟

$$\rightarrow \log\left(\frac{1}{r}\right) = f\left(g\left(\frac{1}{r}\right)\right) = g\left(\frac{1}{r}\right) = r \cos\left(\frac{1}{r}\right) = r \cdot \frac{1}{r} = 1$$

$$f\left(\frac{1}{r}\right) = \sqrt{\frac{1}{r}} = \frac{1}{\sqrt{r}}$$

$$\rightarrow \log(r) = g(r) = \frac{r}{1-r} = \frac{1}{1-r} = \frac{r(1+r)}{1-r} = -(r+r)$$

$$f(1-r) = \left[\frac{1}{1-r} \right] = \left[\frac{1}{1-r} \right] = -2 \quad \log(r) = -2$$

$$f(x) = \sin x$$

$$g(x) = \sqrt{1-x} \Rightarrow \frac{1}{r} \sqrt{1-\frac{1}{r}} = \frac{1}{r} \cdot \sqrt{\frac{r-1}{r}} = \sqrt{\frac{1}{r}} = \sqrt{\frac{1}{r}} = \frac{1}{\sqrt{r}}$$

$$\log: \sin x \rightarrow g\left(\frac{1}{r}\right) \Rightarrow \frac{1}{r} = \frac{1}{r} = \sin \frac{1}{r} \quad g\left(\frac{1}{r}\right) = \frac{1}{r}$$

$$\rightarrow \log \begin{array}{c} \frac{1}{r} \xrightarrow{g} \frac{1}{r} \\ \frac{1}{r} \xrightarrow{g} \frac{1}{r} \\ \frac{1}{r} \xrightarrow{g} \frac{1}{r} \\ \frac{1}{r} \xrightarrow{g} \frac{1}{r} \end{array}$$

$$\log = \left\{ (1, 0), (1, 0), (1, 0), (1, 0) \right\}$$

$$\rightarrow g\left(\begin{array}{c} \frac{1}{r} \xrightarrow{g} \frac{1}{r} \\ \frac{1}{r} \xrightarrow{g} \frac{1}{r} \end{array} \right) \quad \begin{array}{c} \frac{1}{r} \xrightarrow{g} \frac{1}{r} \\ \frac{1}{r} \xrightarrow{g} \frac{1}{r} \end{array}$$

$$g\left(\frac{1}{r} \right) = \frac{1}{r}$$

Übung 1

2) Pol

$$\varepsilon \xrightarrow{p_{(n)}} \omega \xrightarrow{p_{(n)}} \gamma$$

$$\text{Pol} = \emptyset$$

-2

$$\gamma \xrightarrow{v} \omega \rightarrow \alpha$$

$$\gamma \xrightarrow{u} \gamma \xrightarrow{u} \alpha$$

$$\gamma \xrightarrow{u} \gamma \xrightarrow{u} \alpha$$

3) gog

$$\varepsilon \xrightarrow{g_{(n)}} \gamma \xrightarrow{g_{(n)}} \gamma$$

$$\text{gog} = \{(\varepsilon, 1), (1, \gamma), (\gamma, 1)\}$$

$$\gamma \xrightarrow{u} \varepsilon \xrightarrow{u} \gamma$$

$$\gamma \xrightarrow{u} \gamma \xrightarrow{u} 1$$

$$\gamma \xrightarrow{u} 1$$

$$f = \{(1, 1), (1, \gamma), (\varepsilon, \omega), (1, \gamma)\}$$

-3

$$g = \{(1, \gamma), (1, \gamma), (a, \gamma), (b, 1)\}$$

$$\text{fag} \Rightarrow 1 \xrightarrow{g_{(n)}} \gamma \xrightarrow{f_{(n)}} 1$$

$$\gamma \xrightarrow{u} 1 \rightarrow 1$$

$$a \xrightarrow{u} \gamma \xrightarrow{u} \gamma \rightarrow (\varepsilon, \gamma) \rightarrow a \in \varepsilon$$

$$b \xrightarrow{u} 1 \xrightarrow{u} \gamma$$

$$g(f(n)) \stackrel{\gamma}{\rightarrow} 1 \rightarrow f_{(n)} \in a \in b$$

$$a = \varepsilon, b = a = (\varepsilon, \omega)$$

$$\text{fag} \Rightarrow f(n+1) \Rightarrow a(a+n+1) \Rightarrow \text{fag} \Rightarrow a+n+1, \varepsilon a+n \Rightarrow$$

-4

$$f(n) = -n - 1 \text{ or } f(n) = n+1$$

$$n = -1 \rightarrow f(-1) = -1 \quad g(n+1) = n+1$$

$$g(-1) = -1 \rightarrow (n-1) = -1 \rightarrow \text{fag}$$

gog

$$n = -2 \quad g(-1) = -1$$

$$g(f(-1)) = -1$$

حسنیہ

$$f(n): \sqrt{x+|x|} \rightarrow 0 \leq x+|x| \rightarrow n \geq 0 \rightarrow \mathcal{O}(1) \in \mathbb{R}, +\infty) \quad -v$$

$$g_{n+1} = \frac{1}{n^2 - 8n} \geq 0 \rightarrow n(n-8) \geq 0 \rightarrow n \geq 8 \rightarrow 172 - 3084$$

$\{f_n\}$ $f_n(x) = a_n x$ $\{a_n\}$

$$f: \Sigma \rightarrow \Sigma \rightarrow \Lambda \quad \text{Dga} f: (0, \Lambda) \cup (\Lambda, \infty)$$

(log) of $\sqrt{a} + \sqrt{1-a} \Rightarrow \sqrt{1-a} + \sqrt{1+a}$ - 1

$$\sqrt{1-n} + |n| \rightarrow 1-n \geq 0 \rightarrow 1 \geq n \rightarrow -1 \leq n \leq 1$$

Def: Let $a \in [-1, 1]$, $a \leq \sqrt{1-n'} \leq 1 \Rightarrow n' \geq 0$

$$Dg_s, n \geq 0 \cap Df_s, -1 \leq n \leq 1 \rightarrow a \leq n \leq 1$$

$$\text{Sol)} \quad L\left(\frac{n+1}{n-r}\right), \quad 2n+2 = \frac{n+1}{n-r} \quad \text{at} \quad 2n-2 = n+1 \quad -9$$

$n(t=0)$ steel

$$\text{Ans } f_{(n)} = 2 \left(\frac{n+1}{t-1} \right) + 2 = \frac{n+3t-1}{t-1} = \frac{10+3n-1}{1-1} \rightarrow \frac{10+3n-1}{n-1} = f_{(n)}$$

$$\rightarrow f(x, y, z) = x^2 + y^2 + z^2 = 1 \Rightarrow x^2 = 1 - y^2 - z^2 \Rightarrow x = \pm \sqrt{1 - y^2 - z^2}$$

$$(x_n^1, \dots, x_n^m) \xrightarrow{x_n^1, \dots, x_n^m} x^1, \dots, x^m \in \mathbb{R}^1 \rightarrow \text{Limes } x^1, \dots, x^m$$

9 (1) 20

10 - اكتب من

g(vr) is a

1. (a) $\frac{1}{2} \pi$ (b) $\frac{1}{2} \pi$ (c) $\frac{1}{2} \pi$ (d) $\frac{1}{2} \pi$

$$(x e_m^1, \dots, x e_m^1) \xrightarrow{x e_m^1} x e_m^1 = f(e) \rightarrow \lims, n e_m^1$$

$$g(1) = 0$$

$$M_1 = 1 \text{ - to } \text{اضافه من}$$

$$g(1) = 0$$

هو لحد

$$f(n) = n \rightarrow n \sqrt{a} \rightarrow a$$

$$n \sqrt{a} \rightarrow a$$

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