

سینا لاطس

$$\text{الف) } \frac{n}{n_1} = \frac{n}{n_{-1}} > 0 \rightarrow \frac{n(n_{-1}) - n^2}{n(n_{-1})} > 0 \rightarrow \frac{-n^2}{n(n_{-1})} > 0$$

$$D_f = (-\infty, 0) \cup \left[\frac{1}{2}, 1\right)$$

—) 42 - 1, 0, 1, - 2

$$\frac{r}{n-1} + \frac{1}{n+r} \neq 0 \leadsto \frac{r(n+r) + (n-1)}{(n-1)(n+r)} \neq 0 \leadsto \frac{rn + r + n - 1}{(n-1)(n+r)} \neq 0 \leadsto n \neq \frac{1-r}{r}$$

$$D_f = \{ -2, -1, 0, 1, -\frac{d}{\epsilon} \}$$

$$0 < \underbrace{\left(\frac{1}{2}\right)^{10-9}}_{\sim 1} \underbrace{\left(\frac{1}{2}\right)^{10-9}}_{\sim 1} \approx 0$$

$\begin{array}{c} -r \quad r, w \\ + \bullet - \bullet + \end{array}$

$$D_f = R - (-r_2, r_1)$$

$$\therefore \sqrt{y+1} = n - \sqrt{n-1}$$

$$n - \sqrt{n-1} > 0 \leadsto n > \sqrt{n-1}$$

$$u_{-1} \leq 1$$

$2 \leq 12$

$$n_f = [1, 1]^T$$

$$f(u) = \frac{\log e}{\sqrt{u^2 + 1}}$$

$$a^T - 1 \geq 0$$

$$a_1 \geq 1, a_2 \geq 1, \dots, a_n \geq 1 \quad (1)$$

$$u(r-r) \rightarrow \underbrace{(r-r)}_{=0} \rightarrow \frac{-1}{+0-0} \rightarrow (-\infty, -1) \cup (r, +\infty) \quad (17)$$

(1) $q(t) \rightarrow p_f = (-\infty, -1) \cup (1, +\infty)$

$$f(-r) = 0 \rightarrow 3 - 2\alpha - \varepsilon = 0 \rightarrow \alpha = -\frac{1}{2}$$

$$f(u) = \sqrt{-a^2 - \frac{1}{4}a_1 + u}$$

$$-a_1^2 - \frac{1}{r} a_1 + \mu = 0.$$

$$u^2 + \frac{1}{r} u - r = 0 \quad \rightarrow \quad \frac{-\frac{1}{r} \pm \sqrt{\frac{1}{r^2} - 4(-r)}}{2} = \frac{-\frac{1}{r} \pm \sqrt{\frac{4r}{r^2}}}{2}$$

$$a + b \rightarrow -\frac{1}{r} + \frac{r}{r} = 1$$

$$= \frac{-\frac{1}{r} + \frac{1}{r}}{r} \rightarrow \frac{-\frac{1}{r} + \frac{1}{r}}{r} = \frac{0}{r} = 0$$

$$\frac{-\frac{1}{2} - \frac{1}{2}k}{2} = -\frac{1}{2}$$

-5

$$f(n) = n \geq 0 \rightarrow f(n) \geq n$$

$$n \geq 1 \rightarrow n-1 \geq 0 \rightarrow n \geq 1 \quad (I)$$

$$n < 1 \rightarrow 2n + 3 \geq n \rightarrow n \geq -3 \rightarrow -3 \leq n < 1 \quad (II)$$

$$(I) \cup (II) \rightarrow D_f = [-3, +\infty)$$

-6

$$f(x) = 2x(x-2)$$

$$f\left(\frac{\sqrt{x}+1}{2}\right) \rightarrow f\left(\frac{2+\sqrt{x}}{2}\right) = 2 \cdot \frac{2+\sqrt{x}}{2} \left(\frac{2+\sqrt{x}}{2} - 2\right) \rightarrow \frac{x-x}{2} \rightarrow \left(-\frac{1}{2}\right)$$

-7

$$f\left(\frac{a+1}{a-1}\right) = a \rightarrow \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} = a \rightarrow \frac{a+1+a-1}{a-1} = a$$

$$f(a) = \frac{a+1}{a-1}$$

$$\frac{2a}{2} = a \rightarrow 2a = 2a$$

اذا كان a = 1

$$R = \{1\}$$

-8

$$f(g(a)) = -\varepsilon$$

$$a^2 - f(a) = -\varepsilon$$

$$a^2 - f(a) + \varepsilon = 0 \rightarrow (a-r)^2 = 0$$

$$a = r \rightarrow g(a) = r$$

$$\sqrt{a^2 - 1} = r \rightarrow a^2 - 1 = r^2$$

$$a^2 = r^2 + 1$$

$$a = \pm \sqrt{r^2 + 1}$$

-9

$$f(x) = 1 - 0 + x \rightarrow f(x) = x$$

if $a = 1$

$$f(x) \cdot f(-x) = 1 \cdot 1 \cdot 1 = 1 \quad (1 \cdot 1 \cdot 1)$$

$$f(a) = -1 \rightarrow f(-x) = 1 \cdot 1 + 1 \cdot 1 \rightarrow f(-x) = 1 \cdot 1$$

$$K(\cos^2 + 0 \cos u = 3, 0) \rightarrow K(\cos^2 + 0 \cos u - 3, 0 = 0$$

$$-0 \pm \sqrt{0 - 4(-1 \cdot 3)} \rightarrow -0 \pm 6 \rightarrow \frac{1}{2} \cdot 6 = 3$$

$$\cos u = \frac{1}{3} \rightarrow u = \arccos\left(\frac{1}{3}\right) \rightarrow \tan u = \pm \sqrt{1 - \left(\frac{1}{3}\right)^2} \rightarrow \tan u = \pm \frac{\sqrt{8}}{3}$$

$$f(3, 0) = 3$$