

ابو عبد الله محمد بن اسماعيل بن ابي طالب

$$\frac{1}{x+1} - \frac{x}{x}$$

$$n \neq -1, 0, 1, -2 \quad \frac{n+7+n-1}{(n-1)(n+2)} \quad \text{r} \quad \frac{n+2}{(n-1)(n+2)} \quad \text{r} \quad -n \neq -2$$

$$f(n) = \sqrt{\left(\frac{1}{n}\right)^2 - 1} \cdot (n - 1) \geq 0$$

$$D_f \subset \mathbb{R} = \left\{ -\frac{a}{2}, -1, 0, 1 \right\}$$

ب) $\sqrt[n]{n-1} + \sqrt{y+1} \leq r \rightarrow \sqrt[n]{n-1} \leq r - \sqrt{y+1} \rightarrow \sqrt[n]{n-1} \leq r$
 $n \geq 1$ $n-1 \leq 1 \rightarrow n \leq 12$

$$f(x) \text{ slog } (x^2 - x - 5) = (x-2)(x+1) > 0$$

$$\begin{array}{c|c|c} -1 & 2 & \\ \hline 4 & -1 & + \end{array} \quad \begin{array}{l} 2x > 2 \\ 2x < -1 \end{array}$$

$$\sqrt{x^2-1}+1$$

$$\sqrt{x^2-1} \neq -1 \checkmark$$

$$n \geq 1, n \leq -1$$

$$\frac{2}{120} \rightarrow \frac{1}{60}$$

$$f(n) \leq \sqrt{n + a(n-1)}$$

$$D_f = [-r, b]$$

$a + b \cdot 8$

$$\frac{x}{x} - \frac{1}{x} = \frac{x-1}{x}$$

$$-x^2 + \underline{ax} + \underline{c} \quad - (x+r)(x-b)$$

$$b - r_s - \frac{1}{r} s a$$

$$b_s \frac{r}{r}$$

$$g(x) = \sqrt{f(x) - x}$$

بزرگترین مقدار حاصل می شود $\rightarrow 2x - 2 - x \leq 2x - 2$ $x \geq 1$

$$x < 1 \quad \gamma_{\lambda} + \Gamma - \lambda, \lambda + \Gamma \rightarrow \lambda \geq -\Gamma \rightarrow [-\Gamma, 1) \quad x < 1$$

$$Dg_s[\vec{r}, t]$$

$$f(n) \text{ s r n}^2 - 2n \text{ s r n}(n-1) \rightarrow r \left(\frac{\sqrt{r}}{r} + 1 \right) \left(\frac{\sqrt{r}}{r} - 1 \right) \text{ s } \frac{r}{r} - \left(\frac{r-1}{r} \right) - 4$$

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

$$f(f(a)) = c$$

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

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

۲۰۱۱

$a \neq 1$
 $a \in R - \{1\}$

$$f(x) = x^2 - 2x \quad g(x) = \sqrt{x^2 - 1} \quad f(g(x)) = -2 \quad \text{as } \pm \sqrt{a} - 1$$

$$x^2 - 2x = -2$$

$$x^2 - 2x + 2 = 0 \rightarrow (x-1)^2 = 0$$

$$\rightarrow g(x) = 1 \rightarrow \sqrt{x^2 - 1} = 1$$

$$x^2 - 1 = 1 \rightarrow x^2 = 2 \rightarrow x = \pm \sqrt{2}$$

$$f(x+1) = x^2 - 2x + 1$$

$$f(x) \times f(-x) = ?$$

$$x+1=2 \rightarrow x=1 \rightarrow 1 - 2 + 1 = 0$$

$$1 \times \sqrt{1^2 - 1} = 0$$

$$x+1=-1 \rightarrow x=-1 \rightarrow 1 - 2 + 1 = 0$$

$$f(x \cos \theta + a \cos \theta) = \tan^2 \theta$$

$$f(x, a)$$

$$-1$$

$$x \cos \theta + a \cos \theta = \frac{1}{\cos \theta} \rightarrow x \cos \theta + a \cos \theta = \frac{1}{\cos \theta} \rightarrow x \cos \theta + a \cos \theta = \frac{1}{\cos \theta}$$

$$\left(\cos \theta + \frac{a}{x} \right) \left(\cos \theta - \frac{1}{x} \right) = 0$$

$$\cos \theta = \frac{-\frac{a}{x} \pm \sqrt{\left(\frac{a}{x} \right)^2 - \left(\frac{1}{x} \right)^2}}{1}$$

$$\frac{1}{x} \rightarrow \cos \theta = \frac{1}{x} \rightarrow \tan \theta = \frac{\left(\frac{\sqrt{x^2 - 1}}{x} \right)}{\left(\frac{1}{x} \right)}$$