

$$\frac{n-1}{n} - \frac{n}{n-1} \geq 0 \quad \frac{(n-1)^2 - n^2}{n(n-1)} \geq 0 \quad \frac{-2n+1}{n(n-1)} \geq 0 \quad + \frac{0}{1} - \frac{1}{1} + \frac{1}{1} -$$

$$n+1 \neq 0 \quad (n \neq -1) \quad n \neq 0 \quad n-1 \neq 0 \quad (n \neq 1) \quad \frac{1}{n-1} + \frac{1}{n+1} \neq 0 \quad 1n+1+n-1 \neq 0 \quad 2n \neq 0$$

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

$$D_f = \mathbb{R} - \left[-\frac{1}{2}, -\frac{1}{2} \cup \frac{1}{2}, 1\right]$$

$$\left[\left(\frac{1}{3}\right)^n - 9\right] \left(32 - 2^n\right) \geq 0 \quad + \frac{-1}{1} + \frac{1}{1} + \frac{1}{1} \quad D_f = (-\infty, -2] \cup \left[\frac{8}{3}, +\infty\right)$$

$$\sqrt{y+1} = 3 - \sqrt{n-1} \quad \text{بزرگتر از 0}$$

$$\text{I} \quad 3 - \sqrt{n-1} \geq 0 \quad \text{II} \quad \sqrt{n-1} \leq 3 \quad n-1 \leq 9 \quad n \leq 10$$

$$\text{I} \quad n-1 \geq 9 \quad n \geq 10 \quad D_f = [10, +\infty)$$

$$\text{I} \quad n^2 - n - 2 \geq 0 \quad (n-2)(n+1) \geq 0 \quad + \frac{1}{1} - \frac{1}{1} + \frac{1}{1}$$

$$n \leq -1 \quad n \geq 2 \quad \text{III} \quad \sqrt{n^2-1} + 1 \neq 0$$

$$\text{II} \quad n^2 - 1 \geq 0 \quad n^2 \geq 1 \quad (n \geq 1) \quad (n \leq -1)$$

$$D_f = (-\infty, -1) \cup (2, +\infty)$$

$$-2 \rightarrow \text{از 2 کمتر}$$

$$3-2a-f=0 \rightarrow 2a=1 \quad a = -\frac{1}{2}$$

$$-n^2 - \frac{1}{2}n + 2 \rightarrow \left(2b - \frac{1}{2}\right)(n+2) \quad b = \frac{1}{2}$$

$$a+b=1$$

if  $n \geq 1$   $g(n) = \sqrt{2n-2} \rightarrow 2n-2 \geq 0 \quad n \geq 1$   $D_f = [-2, +\infty)$

if  $n < 1$   $g(n) = \sqrt{n+2} \rightarrow n+2 \geq 0 \quad n \geq -2$   $n \geq -2$

بافتن  $n < 1$   $n \geq -2$   $n \geq -2$

باید امتیاز بگیری بین جوابها

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$$\sin \frac{\pi}{\gamma} + \cos \pi = \frac{\pi \gamma}{\gamma} + 1 = \frac{\sqrt{\pi} + \gamma}{\gamma} \quad \gamma \in \mathbb{N}$$

$$f\left(\frac{\sqrt{\pi} + \gamma}{\gamma}\right) = \gamma \times \frac{\gamma + \sqrt{\pi} \gamma}{\gamma \gamma} - \gamma \sqrt{\pi} = \frac{\gamma + \sqrt{\pi} \gamma - \sqrt{\pi} \gamma + 1}{\gamma} = \frac{1 + \gamma}{\gamma}$$

$$\gamma \left( \frac{\gamma + \sqrt{\pi} \gamma}{\gamma} \right) - \gamma \sqrt{\pi} - 1 = \frac{\gamma}{\gamma} + \gamma \sqrt{\pi} - \gamma \sqrt{\pi} - 1 = -\frac{1}{\gamma}$$

1, \gamma

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

$$D_f = \mathbb{R} \setminus \{1\}$$

$$x^{\gamma} - \gamma x = -\gamma \quad x^{\gamma} - \gamma x + \gamma = 0$$

$$(x - \gamma)^{\gamma} \quad (x - \gamma)^{\gamma} \rightarrow g(x) = \gamma$$

$$\sqrt{x^{\gamma} - 1} = \gamma \quad x^{\gamma} - 1 = \gamma \quad x^{\gamma} = \gamma + 1 \quad x = \pm \sqrt{\gamma + 1}$$

$$f(-\gamma) \xrightarrow{x=-\gamma} f(-\gamma) = \gamma \gamma + \gamma_0 + \gamma = \gamma \gamma$$

$$f(\gamma) \xrightarrow{x=1} 1 - \gamma + \gamma = \gamma$$

$$x \times \gamma = 1 \quad \gamma \in \mathbb{N}$$

$$f(\cos^{\gamma} x) + \Delta \cos^{\gamma} x = \frac{\gamma}{\gamma}$$

$$f(A^{\gamma} + \Delta A - \frac{\gamma}{\gamma}) = 0$$

$$\cos^{\gamma} x = \frac{1}{\gamma}$$

$$\tan^{\gamma} x = \gamma$$

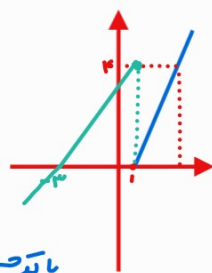
$$\cos^{\gamma} x = \frac{1}{\gamma} \quad (A + \gamma)(A - \gamma)$$

$$f(n) - n = \begin{cases} n^2 - 2 - n & n \geq 1 \\ n + 3 - n & n < 1 \end{cases} = \begin{cases} n^2 - 2 & n \geq 1 \\ n + 3 & n < 1 \end{cases}$$

$$f(n) - n \geq 0 \rightarrow \begin{cases} n^2 - 2 \geq 0 \rightarrow n \geq 1 \checkmark \\ n + 3 \geq 0 \xrightarrow{n < 1} -3 \leq n < 1 \checkmark \end{cases}$$

$$\rightarrow Df = [-3, +\infty)$$

باید به پس نیز مشخص است!



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

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$$\sin \frac{\pi}{\varepsilon} + \cos 2\pi = \sqrt{\frac{\varepsilon}{2}} + 1 \rightarrow f\left(\sqrt{\frac{\varepsilon}{2}} + 1\right) = 2\left(\sqrt{\frac{\varepsilon}{2}} + 1 - 1\right)^2 - 2 = 2\left(\frac{\varepsilon}{2}\right) - 2 = -\frac{1}{\varepsilon}$$