

ان) I $x \neq 1$ و 0

$$\frac{(x-1)^r - x^r}{x-1} \cdot \frac{1}{x-1} = \frac{1}{x-1} \cdot \frac{1}{x-1} = \frac{1}{(x-1)^2}$$

if $x \neq 1 \rightarrow \frac{1}{x} - \frac{1}{x} < 0$

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

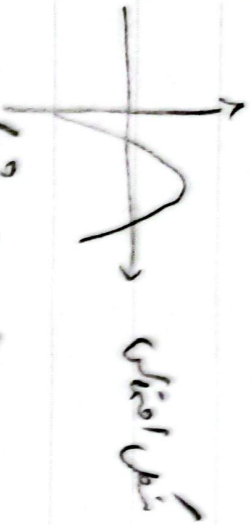
$P_{5/11} \{ \dots \}$

$$\frac{1}{4} - \frac{1}{4} = 0$$

$$\frac{1}{x} - \frac{1}{x} = 0$$

$$\sqrt{x^2 - 2ax - 3} = \sqrt{-1 - 2a} \quad [-1, b]$$

↓
بین درستیها



$$a = \frac{a}{-1} \text{ و } a = -1 + b \rightarrow -1 + b = -\frac{1}{2}$$

$$b = \frac{1}{2} \quad \frac{1}{2} - \frac{1}{2} = \underline{\underline{0}}$$

$$I \langle a-1 \rangle_n \rightarrow \langle n \rangle^2 \quad a_1, 1 \quad \checkmark$$

$$II) \langle na \rangle_n \quad a_1 = 1$$

$$[-1, \infty)$$

$$\sqrt{y+1} = \sqrt{x-1} \rightarrow \text{نیمه عددها صحیح} \rightarrow \sqrt{x-1} \leq \sqrt{y} \rightarrow n-1 \leq a_1 \rightarrow n \leq a_2$$

$$D \neq \emptyset \quad [1, \infty)$$

$$\sin \frac{\pi}{2} = \frac{\sqrt{2}}{2} \quad (\frac{\sqrt{2}}{2} + 1) \text{ و } \sin y \sqrt{2} (n-1)$$

$$\sqrt{(\frac{\sqrt{2}}{2} + 1)} (\frac{\sqrt{2}}{2} - 1) = -\frac{1}{2}$$

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

$$\frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} = \frac{\frac{a+1+a-1}{a-1}}{\frac{a+1-a+1}{a-1}} = \frac{2a}{2} = a$$

Scbs

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

- 1

$$f(\infty) = 2 \quad x^2 - 2x + 2 = 0$$

$$(x-1)^2 = 0$$

$$\sqrt{a^2 - 1} = 2 \quad x = 1$$

$$a^2 - 1 = 2$$

$$a^2 = 3 \quad a = \pm \sqrt{3}$$

2

- 9

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

$$f(-4+2) = (-4)(-4) = 16$$

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

$$\sqrt{2} \times \sqrt{2} = 2$$

$$\sqrt{2} \times \sqrt{2} = 2$$

2

$$2 \cos^2 x + 3 \cos x - \frac{1}{2} = 0$$

- 1.

$$\cos^2 x + 3 \cos x - \frac{1}{2} = 0$$

$$(\cos + 1)(\cos - 2) = 0$$

$$\cos x = -1 \quad \text{or } \cos x = 2$$

2

$$\left(\frac{1}{2}, \frac{1}{2}, \frac{1}{2} \right) \quad \left(\cos x = \frac{1}{2}, \tan x = \frac{1}{\sqrt{3}} \right)$$

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۲-ب) $\sqrt[n]{x-1} + \sqrt{y+1} = 3$, $\underbrace{\sqrt{y+1}}_{\text{همواره نامنفی}} = \underbrace{3 - \sqrt[n]{x-1}}_{\text{همواره نامنفی!}} \rightarrow 3 - \sqrt[n]{x-1} \geq 0 \rightarrow \sqrt[n]{x-1} \leq 3 \rightarrow x \leq 82$ $\mathbb{I}$

$\downarrow$
 $x-1 \geq 0 \rightarrow x \geq 1$ $\mathbb{I}$

$\mathbb{I}, \mathbb{I} \rightarrow 1 \leq x \leq 82 \rightarrow D_f = [1, 82]$