

Subject:

Year: Month: Day: ()

نام خانوادگی: شرف نیل

تاریخ: page: ()

19,0

 $x=0$

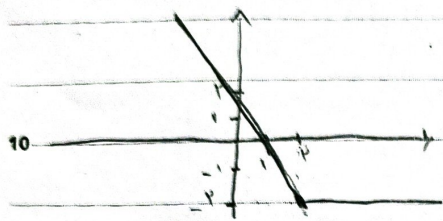
$$y = \sqrt{x^p f(n+1)} \rightarrow P(x) = \left(\frac{1}{p}\right)^{x-1} - 1 \quad (1)$$

$$f(n+1) = \left(\frac{1}{p}\right)^{n-1} - 1 \Rightarrow x^p = 0 \Rightarrow x = 0, f(n+1) = 0 \Rightarrow \left(\frac{1}{p}\right)^{n-1} = 1$$

$$\left(\frac{1}{p}\right)^{n-1} = \left(\frac{1}{p}\right)^0 \Rightarrow n-1=0 \Rightarrow n=1 \Rightarrow \frac{0}{-1+1} \Rightarrow Dy: [0, 1]$$

$$P(x) = \sqrt{x+1} \sqrt{x+2} \quad (2)$$

$$f(x) = \sqrt{-x+1} \sqrt{-x+2} \Rightarrow -x+1 \geq 0$$



$$\Rightarrow Dy: (-\infty, 1]$$

$$\begin{cases} -2 & x \geq 2 \\ -2x+2 & x < 2 \end{cases}$$

$$x-1=0 \Rightarrow x=1, f(x)=0 \Rightarrow$$

$$x=3, x=1, x=-1 \rightarrow$$

$$y = \sqrt{\frac{x-1}{f(x)}} \quad (3)$$

$$\Rightarrow Dy: (-\infty, +1] \cup (2, 3)$$

$$9x^p - 10x^p - 10x - 3 \neq 0 \Rightarrow (9x^p - 10x^p + 1) - x^p - 10x - 3 \neq 0 \Rightarrow$$

$$(3x^p - 1)^p - (x+1)^p \neq 0 \Rightarrow 3x^p - 1 \neq x+1 \Rightarrow 3x^p - x - 2 \neq 0$$

$$3x^p + ax + b \neq 0 \Rightarrow a = -1, b = -2 \Rightarrow \sqrt{-(1-2)} = \sqrt{1} = 1$$

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$$y = \sqrt{f(x) - f\left(\frac{x}{n}\right)} \Rightarrow x^p + x - \left(\left(\frac{x}{n}\right)^p + \frac{x}{n}\right) \geq 0 \Rightarrow x^p + x \geq \left(\frac{x}{n}\right)^p + \frac{x}{n}$$

$$\Rightarrow x^p - \left(\frac{x}{n}\right)^p \geq \frac{x}{n} - x \Rightarrow \left(x - \frac{x}{n}\right) \left(x^p + \frac{14x}{n^2} + x\right) + x - \frac{x}{n} \geq 0$$

$$x - \frac{x}{n} \left(x^p + \frac{14x}{n^2} + x + 1\right) \geq 0 \Rightarrow \left(x - \frac{x}{n}\right) (14x^2 + 1) \geq 0$$

$$\hookrightarrow \frac{1}{n^2} = z \hookrightarrow 14z^2 + 1 + 2z \geq 0 \Rightarrow z \neq 0$$

$$\Rightarrow \frac{1}{x^2} \neq 0 \Rightarrow x^2 \neq 0, x - \frac{x}{n} \neq 0 \Rightarrow x \neq \pm 1 \Rightarrow$$

$$\Rightarrow Dy: (-1, 0) \cup (1, +\infty)$$

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$$x^4 + x = 1 \Rightarrow x = 1, \quad x^4 + x \leq 1, \Rightarrow x = 1 \quad (4)$$

$$x=1 \rightarrow (x^4 - 1) = 0, \quad x \leq 1 \rightarrow (x^4 - 1) \leq 0 \Rightarrow f(1) + f(1) = 1 + 1 = 2 \quad (5)$$

$$g(\sqrt[4]{v} - 1) = (v - 2v - 4\sqrt[4]{v} + 2v\sqrt[4]{v}) + 4(\sqrt[4]{v} - 1) \quad (1)$$

$$+ 2v(\sqrt[4]{v} - 1) \quad \left| \begin{array}{l} \omega + \sqrt[4]{v} \\ -\omega + \sqrt[4]{v} \end{array} \right.$$

$$\Rightarrow g(\sqrt[4]{v} - 1) = v - 2v - 2 = -v \quad (5)$$

$$f(\sqrt[4]{v} + 1) \leq (1 + 1 + 4\sqrt[4]{v} + 12\sqrt[4]{v}) - 4(\sqrt[4]{v} + 1) + 12(\sqrt[4]{v} + 1) \quad (10)$$

$$\Rightarrow 1 + 1 - 2 + 2 = 0$$

$$\Rightarrow \frac{g(\sqrt[4]{v} - 1)}{f(\sqrt[4]{v} + 1)} \leq \frac{-v}{1} \leq -1$$

$$f(x) = \sqrt{(x-1)+1} + 1\sqrt{x-1} \Rightarrow f(x) = \sqrt{(x-1)+1} \Rightarrow f(x) = |\sqrt{x-1}+1| \quad (15)$$

$$f(x) = \sqrt{(x-1)+1}, \quad g(x) = \sqrt{(x-1)-1} \Rightarrow g(x) = |\sqrt{x-1}-1| \quad 1 \leq x < 2$$

$$g(x) = \sqrt{x-1} + 1 - \sqrt{x-1} = 1, \quad x \geq 2 \Rightarrow \sqrt{x-1} + 1 - \sqrt{x-1} = 1 \Rightarrow \sqrt{x-1} = a + b\sqrt{x-1}$$

$$\Rightarrow \frac{a+b}{c} = \frac{1}{-1} \leq -1$$

$$g(x) = \{(1, 1), (1, 0), (2, 1), (0, 1)\} \quad (4)$$

$$x=1 \rightarrow f(1) \leq \frac{1}{1-1+1} = 1, \quad x=1 \rightarrow f(1) \leq \frac{1}{1-1+1} = 1 \quad (5)$$

$$x=2 \rightarrow f(2) \leq \frac{1}{4-1+2} = 1, \quad x=0 \Rightarrow f(0) = \frac{1}{2}$$

$$\frac{g}{f} = \{(1, -\frac{1}{2}), (0, 1)\} \quad (25)$$

$$f(x) = \{(1, 1), (\frac{1}{2}, -1), (2, 1), (-\frac{1}{2}, 1)\} \quad (10)$$

$$f(x) = \{(1, 1), (\sqrt{2}, -1), (2, 1)\} \quad (1, 0)$$

$$f(x) + 1 \leq \{(-2, 1), (1, 2), (2, 1), (-1, 1)\} \quad (30)$$

$$f(x) = \{(1, -1), (2, -1)\}$$

$$\text{ب. ١٥} \left\{ \begin{array}{l} x^r = 1 \rightarrow x = \pm 1 \\ x^r = r \rightarrow x = \pm r \\ x^r = r \rightarrow x = \pm r \\ x^r = -1 \rightarrow x \end{array} \right. \rightarrow \{ (\pm 1, r) (\pm \sqrt{r}, -1) (\pm r, r) \}$$