

تجزیه

تکلیف ۳۰

آبشاری

$$y_2 = \frac{x^2 + 1}{x^3 + 2x^2 - 1} \rightarrow x^3 + 2x^2 - 1 \neq 0 \quad x+1, x+1, x+1, x+1$$

$$R = \{0, 1, \frac{1}{2}, 1\}$$

$$y_2 = \frac{x^2 + 1}{x^3 + 2x^2 + 1} \neq 0$$

$$y_2 = \frac{x^2 + 1}{x^3 - 2x^2 + 2x - 1} \rightarrow (x-1)(x^2 - x + 1)$$

$$y_2 = \sqrt{\frac{(x^2 + 1)}{x^3 - 2x^2 + 2x - 1}} \geq 0 \quad R = \{1\} \quad (x-1)(x^2 - x + 1)$$

$$y_2 = \frac{x^2 - \omega(x-1) - 2x + \omega}{x-1} \quad x^2 - \omega(x-1) - 2x + \omega = 0 \quad x > 1$$

$$y_2 = \sqrt{[-x] - 1} \quad [-x] = -2 \geq -1 \rightarrow [-x] \geq 1$$

$$y_2 = \frac{\omega x^2 + 1}{[x]^2 - 2[x] - 1} \quad [x] \geq -1$$

$$[x]^2 - 2[x] - 1 \neq 0 \quad (-\infty, -1) \cup (1, \infty)$$

$$[x] \neq 1, -1 \quad [x] = -1$$

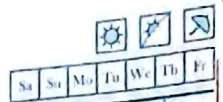
$$R = (-1, 1) \cup (1, \infty)$$

Subject

Year

Month

Date



۵- آسانی

$$\sqrt{\left(x - \frac{1}{r}\right) + \left(x + \frac{1}{r}\right)} \geq 0$$

$$\left(x - \frac{1}{r}\right) + \left(x + \frac{1}{r}\right) \geq 0 \rightarrow \left(x \geq \frac{1}{r}\right)$$

$$\frac{1}{r} \rightarrow \frac{1}{r} \rightarrow x \geq \frac{1}{r} \rightarrow \frac{1}{r} - \frac{1}{r} = 0$$

$$\sqrt{\left(x - \frac{1}{r}\right) + \left(\frac{1}{r} - x\right)} \geq 0$$

$$a = x - \frac{1}{r} \rightarrow [a] + [-a] \geq 0 \quad (-1) \leq a \leq 1$$

$$(1) \quad (-1) - r \quad a = x + \frac{1}{r}, x \in \mathbb{Z}$$

$$\cos \theta + \frac{1}{r} \Rightarrow 2k\pi, 2k\pi + \pi \quad R - \star$$

$$\tan \theta = \frac{1}{r} \Rightarrow 2k\pi + \frac{\pi}{2}, 2k\pi - \frac{\pi}{2} \quad y - \star$$

$$\tan \theta = -1 \Rightarrow 2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{11\pi}{4}$$

$$y = \sqrt{1 - r \sin^2 \theta}$$

$$1 - r \sin^2 \geq 0$$

$$\sin^2 \leq \frac{1}{r} \rightarrow |\sin| \leq \frac{1}{\sqrt{r}}$$

$$-\frac{1}{\sqrt{r}} \leq \sin \leq \frac{1}{\sqrt{r}}$$

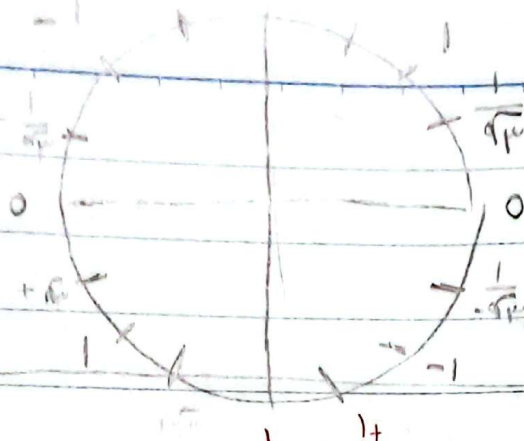
$$-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2} \rightarrow \left[2k\pi + \frac{\pi}{2}, 2k\pi - \frac{\pi}{2}\right] \cup \left[2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{11\pi}{4}\right]$$

$$y = \sqrt{r \sin^2 - 1} \geq 0 \quad r \sin^2 \geq 1 \rightarrow \sin \geq \frac{1}{\sqrt{r}} \rightarrow \left[2k\pi + \frac{\pi}{2}, \frac{3\pi}{4} + 2k\pi\right]$$

$$y = \sqrt{1 - r \cos^2} \geq 0 \quad \cos \leq \frac{1}{\sqrt{r}} \rightarrow \left[\frac{\pi}{2} + 2k\pi, \frac{3\pi}{4} + 2k\pi\right]$$

آب رسی

Subject	Year	Month	Date



$\tan^{-1}$

$$\frac{1}{x} = \frac{1}{\sqrt{1-x^2}}$$

$$\frac{1}{\sqrt{1-x^2}} = \frac{1}{\sqrt{1-\frac{1}{x^2}}}$$

آب رسی

$[-1, 1]$

$$x^2 + 3x + 1 \leq 1$$

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

$$y = \arcsin(x^2 + 3x + 1) \rightarrow$$

$$x^2 + 3x \leq 0$$

$$x(x+3) \leq 0$$

$$x^2 + 3x + 1 \geq -1$$

$$x^2 + 3x + 2 \geq 0 \rightarrow (x+2)(x+1) \geq 0$$

$$c.sy = \sqrt{a-2x} \rightarrow (-\infty, 2] \cup [9, +\infty) \quad \checkmark \quad [-1, 0] \Rightarrow [-1, 0] - (-1, 0)$$

$$[-1, 1] \quad \sqrt{a-2x} \geq 0 \rightarrow a-2x \geq 0 \rightarrow x \leq \frac{a}{2} \rightarrow [-1, 1]$$

$$y = \log_r (1 - \log_r x) \quad \begin{cases} x > 0 \\ 1 - \log_r x > 0 \end{cases}$$

$$\log_r x < 1 \quad x < r$$

$$y = \log_r (1 - \log_r \frac{1}{r}) \quad \begin{cases} x > 0 \\ 1 - \log_r \frac{1}{r} > 0 \end{cases}$$

$$\log_r \frac{1}{r} < 1 \rightarrow x < \frac{1}{r}$$

$$y = \sqrt{r^2 x - x^2} \quad \begin{cases} r^2 x - x^2 \geq 0 \\ x \geq 0 \end{cases} \rightarrow -x^2 + r^2 x \geq 0$$

$[+1, 3]$

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

$$(x+3)(x+1) = x^2 - 3 \rightarrow x = 1$$

$$y = \left(\frac{rx + \omega}{rx + \epsilon} \right) ! \quad k \in W$$

$$k \left(\frac{rx + \omega}{rx + \epsilon} \right) \in W \rightarrow x = \frac{rw - \omega}{rw - r}$$

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