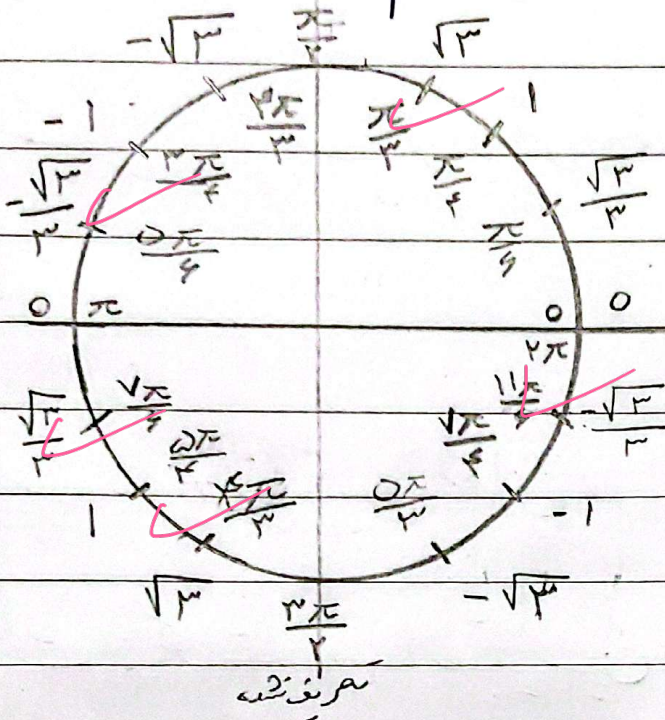


١ - تالیف شماره ٢ ریاضی
١٩١٥ آفین

پیر عالم
تعریف شده



٢ -
الف) $\frac{1}{3} + (-1) + 2 \times (-1) = -\frac{2}{3}$

ب) $-(-\frac{\sqrt{3}}{3}) + \frac{\sqrt{3}}{3} - 3 \times (-\frac{\sqrt{3}}{3}) = \frac{5\sqrt{3}}{3}$

ج) $\frac{\sqrt{3}}{3} + 3 \times \frac{\sqrt{3}}{3} - 2(-\frac{\sqrt{3}}{3}) = \frac{4\sqrt{3}}{3}$

د) $\cos(0) + \sin(2\pi \times \frac{1}{3}) = 1 + 1 = 2$

٣ -
 $n=a \rightarrow n^2 + 5n = 2n + n + 2 \Rightarrow$

$n^2 + n - 2 = 0 \Rightarrow n = -2 \text{ و } n = +1$

$f(1) = n^2 + 5n = 1 + 5 = 6$

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$$|n+1| \geq 2 \xrightarrow{n \geq -1} n \geq 1 \quad \text{--- } \mathbb{R}$$

$$\xrightarrow{n \leq 1} n \leq -3$$

$$n = -3 \rightarrow 1 - b = a - 9 \Rightarrow a + b = 10 \quad \text{--- } \mathbb{P}$$

$$\text{الف) } n^3 - 5n^2 \neq 0 \Rightarrow n(n-5) \neq 0 \quad \text{--- } \mathbb{O}$$

$$n \neq 0, 5 \quad D_f = \mathbb{R} - \{5, 0\}$$

$$\text{ب) } 2n^3 + 5n^2 + 2n + 1 \neq 0 \quad \text{--- } \mathbb{P}$$

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

$$D_f = \mathbb{R} - \{-\frac{1}{2}\}$$

$$n^2 - 1 \geq 0 \quad n - 2 \geq 0 \quad \text{--- } \mathbb{Y}$$

$$n \geq 2$$

$$\frac{-1}{+6} - \frac{1}{-6} + \quad (-\infty, -1] \cup [1, \infty) \cap [2, \infty) = [2, \infty)$$

$$\text{ج) } 9 - 2n \geq 0 \quad 4n - 3 > 0 \quad \text{--- } \mathbb{P}$$

$$n \leq \frac{9}{2}$$

$$n > \frac{3}{4}$$

$$(-\infty, \frac{9}{2}] \cap (\frac{3}{4}, \infty) = (\frac{3}{4}, \frac{9}{2}]$$

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$$4n - a \xrightarrow{n=2} 12 - a = 0 \quad a = 12 \quad -V$$

$$b - 3n \xrightarrow{n=2} b - 6 = 0 \quad b = 6$$

$$\frac{b}{a} = \frac{6}{12} = \frac{1}{2} \quad \textcircled{P}$$

$$\text{الف) } \frac{(n-3)(n+2)}{(n^2-4)(n^2-9)} \geq 0 \quad \begin{array}{ccccccc} & -3 & -2 & 2 & 3 & & -1 \\ + & \frac{1}{0} & - & \frac{1}{0} & - & \frac{1}{0} & + \end{array}$$

$$D_f = (-\infty, -3) \cup (2, \infty) - \{3\}$$

$$\text{ب) } \frac{(n-1)(n^2-n-6)}{(n+1)(n^2+n-6)} \quad \begin{array}{ccccccc} & -3 & -2 & -1 & 1 & 2 & 3 \\ + & \frac{1}{0} & - & \frac{1}{0} & - & \frac{1}{0} & + \end{array}$$

$\textcircled{P}$

$$D_f = (-\infty, -3) \cup [-2, -1) \cup [0, 2) \cup [3, \infty)$$

$$2[n] \geq 4 \Rightarrow n \geq 2 \quad \textcircled{P} \quad -9$$

$$2[n] \geq 0 \Rightarrow [n] \geq 0 \quad n \geq 3$$

$$\text{الف) } \frac{n+1}{(n-3)} \geq 0 \Rightarrow \frac{-1}{0} \quad \begin{array}{c} 3 \\ + & \frac{1}{0} & - & \frac{1}{0} & + \end{array} \quad \textcircled{1, 5} \quad -10$$

هوانه باقیمانده مثبت یا منفی علامت نبود

$$\frac{4-n}{n^2+2n+4} \geq 0 \quad n \leq 4 \quad D_f = (-\infty, -1] \cup (3, 4]$$

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$$-) [n] \geq 2 \Rightarrow n \geq 2$$

$$[n] \leq 2 \Rightarrow n < 3 \quad \cancel{D_f} = \emptyset$$

(الف-١٠) $y = \sqrt{\frac{n+1}{|n-4|}} + \sqrt{\frac{4-n}{n^2+n+2}}$

$\left[\frac{n+1}{|n-4|} \geq 0 \right] \rightarrow n \geq -1, n \neq 4 \quad \text{I}$
 $\left[\frac{4-n}{n^2+n+2} \geq 0 \right] \rightarrow n \leq 4 \quad \text{II}$

في قسمة مخرج! مخرج! مخرج!

في قسمة مخرج! مخرج! مخرج!

$\text{I} \cap \text{II} \rightarrow D_f = [-1, 4) \cup (4, 4] \subseteq [-1, 4] - \{4\}$