

۲.۰۰

دوازدهم پسرانه

Date

Subject

$$\frac{a \sin(\frac{\sqrt{3}\pi}{6}) + b \cos \frac{\sqrt{3}\pi}{6}}{a \sin \frac{11\pi}{6} + b \cos \frac{\pi}{6}} = \frac{-\frac{a\sqrt{3}}{2} - \frac{\sqrt{3}}{2}b}{-\frac{a}{2} + \frac{b}{2}} = \tan \frac{5\pi}{6} = -\frac{\sqrt{3}}{3} \quad (1)$$

$$\rightarrow \frac{\sqrt{3}a + \sqrt{3}b}{b - a} = \frac{\sqrt{3}}{3} \rightarrow \sqrt{3}a + \sqrt{3}b = \sqrt{3}b - \sqrt{3}a \rightarrow (\frac{\sqrt{3}}{3})a = (\frac{\sqrt{3} - \sqrt{3}\sqrt{3}}{-2\sqrt{3}})b$$

$$\rightarrow \frac{b}{a} = \frac{\sqrt{3}}{-2\sqrt{3}} = -\frac{1}{2} \quad \checkmark$$

$P(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}) \rightarrow P(\frac{1}{\sqrt{2}}, \frac{\sqrt{3}}{2}) : \theta = 45^\circ$ ~~این نقطه در ربع اول است~~ (2)

~~این نقطه در ربع اول است~~ $OP = OP' = 1 \rightarrow \alpha = 15^\circ \rightarrow PP' = 1^2 + 1^2 - 2(1)(1)\cos 30^\circ$

$$PP' = 2 + \sqrt{3} = \frac{1}{\sqrt{2}}(\sqrt{3} + 1) \rightarrow PP' = \frac{\sqrt{2}}{\sqrt{2}}(\sqrt{3} + 1) = \frac{\sqrt{6} + \sqrt{2}}{\sqrt{2}}$$

$PP' = \frac{\sqrt{6} + \sqrt{2}}{\sqrt{2}} + 1$

$$\frac{\frac{\pi}{9}}{\pi} = \frac{D}{11.0} \rightarrow D = 2.0 \rightarrow \text{سرعت} \quad \text{۲ دقیقه} : \text{سرعت} \quad \text{۲.۰} \quad \checkmark \quad (3)$$

$$2 \rightarrow 2.0$$

$$3:00 : |3.h - 5.0M| = 2.0 \xrightarrow{h=3} |9 - 5.0M| = 2.0 \quad \checkmark \quad (4)$$

$$\rightarrow M_1 = \frac{1.0}{11}, \underline{M_2 = 2.0}$$

$$-\frac{\pi}{4} < x \leq \frac{5\pi}{4} \rightarrow -\frac{1}{\sqrt{2}} < \sin x \leq 1 \rightarrow -\frac{1}{\sqrt{2}} < \frac{m-2}{5} \leq 1 \quad (5)$$



$$\rightarrow \frac{1}{\sqrt{2}} < m \leq 1 \rightarrow [\frac{1}{\sqrt{2}}, 1]$$

$$\frac{\sin(90^\circ + 10^\circ) + k \cos(10^\circ - 10^\circ)}{\cos(10^\circ - 10^\circ) + Y \sin(10^\circ + 10^\circ)} = \frac{\cos(10^\circ) + k \sin 10^\circ}{- \cos 10^\circ - Y \sin 10^\circ} \quad (4)$$

$$= \frac{1 - k \tan 10^\circ}{-1 - Y \tan 10^\circ} = Y \rightarrow 1 - \frac{k}{Y} = -\frac{9}{Y} \rightarrow k = 2Y$$

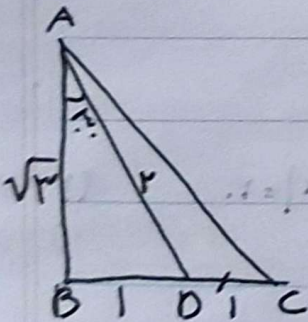
$$\frac{1 - \cos x}{1 + \cos x} = Y \rightarrow Y \cos x = -1 \rightarrow \cos x = -\frac{1}{Y}$$

$$A = \frac{\tan(\frac{\pi}{Y} - x) - \cot(\pi - x)}{\cot(\frac{\pi}{Y} - x) + Y \tan(\pi - x)} = \frac{\cot x + \cot x}{\tan x - Y \tan x} = \frac{+Y \cot x}{\tan x} = -Y \cot x$$

$$1 + \tan^2 x = \frac{1}{\cos^2 x} = 9 \rightarrow \tan^2 x = 8 \rightarrow \cot^2 x = \frac{1}{8} \rightarrow A = -Y \left(\frac{1}{\sqrt{8}}\right) = -\frac{1}{Y}$$

$$\frac{10^\circ}{10^\circ} = \frac{\square}{\pi} \rightarrow \frac{Y\pi}{9} \quad R_A \cdot A = R_B \cdot B \rightarrow \frac{R_A}{R_B} = \frac{Y_B}{Y_A} = \frac{\frac{9\pi}{10}}{\frac{9\pi}{10}} = \frac{Y}{1}$$

$$\frac{S_A}{S_B} = \left(\frac{R_A}{R_B}\right)^2 = \frac{9}{1}$$



$$S_{ABC} = \frac{\sqrt{5} \cdot BC}{2} = \sqrt{5} \rightarrow BC = 2 \rightarrow DC = 1 \quad (19)$$

$$\rightarrow AC = \sqrt{(\sqrt{5})^2 + 2^2} = \sqrt{9} = 3$$

$$\rightarrow \sin \hat{C} = \frac{\sqrt{5}}{3}, \cos(\hat{C}) = \frac{2}{3}$$

$$\rightarrow \sin Y\hat{C} = Y \sin \hat{C} \cos \hat{C} = Y \cdot \frac{\sqrt{5}}{3} \cdot \frac{2}{3} = \frac{2Y\sqrt{5}}{9}$$

$$AM = AN = \sqrt{Y^2 + 2^2} = \sqrt{Y^2 + 4}, MN = \sqrt{Y}$$

$$MN^2 = AN^2 + AM^2 - 2AM \cdot AN \cos \theta \Rightarrow Y = 2Y(1 - \cos \theta)$$

$$\rightarrow \cos \theta = \frac{1}{2} \rightarrow \sin \theta = \frac{\sqrt{3}}{2}$$