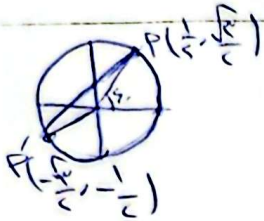


نام و نام خانوادگی آزمون نهایی پاسخنامه تشریحی تکلیف شماره ۱۰۰ ... کلاس ... در آزمون ...

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

$$+ \sqrt{3}a - \sqrt{3}b = -3\sqrt{3}a - 2\sqrt{3}b \rightarrow 4\sqrt{3}a = -2\sqrt{3}b \rightarrow \frac{b}{a} = \frac{-4\sqrt{3}}{-2\sqrt{3}} = 2$$



$$PP' = \sqrt{(\frac{\sqrt{3}+1}{2})^2 + (\frac{\sqrt{3}+1}{2})^2} = \sqrt{2(\frac{4+2\sqrt{3}}{4})}$$

$$PP' = \sqrt{2+\sqrt{3}}$$

$$\text{مساحت} = 1+1+\sqrt{2+\sqrt{3}} = 2+\sqrt{2+\sqrt{3}}$$



میزان جلو آمدگی عقربه‌ی ساعت شمار نصف دقیقه است
 $\frac{a}{9} \approx \frac{10}{9} \approx 22.2^\circ \rightarrow 45^\circ$

مساحت جدید : $2:45$



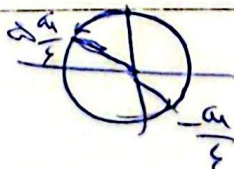
$$\left| \frac{11M}{6} - 30H \right| = 2 \rightarrow H=3, M=8$$

در ساعت ۳:۰۸ برای بار دوم زاویه بین عقربه‌های ساعت شمار و دقیقه شمار ۲ درجه می‌شود.

$$\frac{11M}{6} - 90 = 2 \rightarrow \frac{11M}{6} = 92 \rightarrow M = \frac{140}{11} \approx 12.72$$

$$\frac{11M}{6} - 90 = -2 \rightarrow \frac{11M}{6} = 88 \rightarrow M = \frac{132}{11} = 12$$

$$-\frac{\pi}{6} < a \leq \frac{\pi}{6}$$



$$-\frac{1}{2} < \sin a \leq 1$$

$$-\frac{1}{2} < \frac{m-3}{5} \leq 1 \rightarrow -\frac{5}{2} < m-3 \leq 5 \rightarrow \frac{1}{2} < m \leq 8$$

$$\frac{\sin(\alpha + 10) + k \cos(\gamma - 10)}{\sin(10 - 10) + r \sin(10 + 10)} = r \Rightarrow$$

$$\frac{\cos 10^\circ - k \sin 10^\circ}{\sin 10^\circ - r \sin 10^\circ} = r$$

$$\frac{\sin 10^\circ}{\cos 10^\circ} = \frac{1}{r} \Rightarrow \frac{\sin 10^\circ}{\cos 10^\circ} = \frac{1}{r-k}$$

$$\Rightarrow -r \sin 10^\circ = \cos 10^\circ - k \sin 10^\circ$$

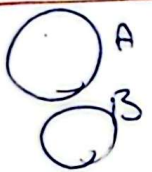
$$\leftarrow (\gamma - k) \sin 10^\circ = \cos 10^\circ$$

$$\frac{1}{r} \frac{\sin 10^\circ}{\cos 10^\circ} = \frac{1}{r-k} \Rightarrow r-k = -r \Rightarrow k=r$$



$$\frac{\tan(\frac{\alpha}{r} - \alpha) - \cot(\alpha - \alpha)}{\cot(\frac{\gamma}{r} - \alpha) + r \tan(\gamma - \alpha)} = \frac{\cot \alpha + \cot \alpha}{\tan \alpha - r \tan \alpha} = \frac{r \cot \alpha}{-\tan \alpha}$$

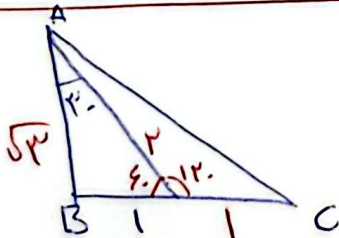
$$\frac{-r \frac{\cos \alpha}{\sin \alpha}}{\frac{\sin \alpha}{\cos \alpha}} = \frac{-r \cos \alpha}{\sin \alpha} \xrightarrow{\cos \alpha = -\frac{1}{r}} \frac{-r \cos \alpha}{\sin \alpha} = \frac{-r \cdot (-\frac{1}{r})}{\sin \alpha} = \frac{1}{\sin \alpha} = \frac{1}{\frac{1}{r}} = r$$



$$L = \frac{1}{r} \frac{1}{f} r \alpha r = \frac{1}{f} \alpha r$$

$$\frac{L}{r} = \frac{\frac{1}{f} \alpha r}{\frac{1}{f} r} = \frac{r}{f} = \frac{r}{r}$$

$$\frac{S_1}{S_2} = \frac{\alpha r_1}{\alpha r_2} = \frac{r_1}{r_2}$$



$$S = \sqrt{r} \rightarrow \triangle ABC = r \sqrt{r} \rightarrow BC = r$$

$$\tan \hat{C} = \sqrt{r} \rightarrow \hat{C} = \gamma \rightarrow \sin 10^\circ = \sin \gamma = \frac{\sqrt{r}}{r}$$