

۲۰۲۰

نام و نام خانوادگی (ایمان هیتسین) پاسخنامه تشریحی تکلیف شماره کلاس دوازدهم B

$$\frac{a \sin \frac{\pi}{4} + b \cos \frac{\pi}{4}}{a \sin \frac{3\pi}{4} + b \cos \frac{3\pi}{4}}, \tan \frac{\pi}{4} \rightarrow \frac{-\frac{\sqrt{3}}{4}a - \frac{\sqrt{3}}{4}b}{-\frac{1}{4}a + \frac{1}{4}b}, -\frac{\sqrt{3}}{3}$$

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

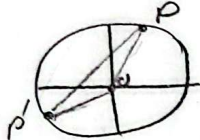
$$\rightarrow \frac{b}{a} = -\frac{2a}{a} = -2 \quad \checkmark$$

$$P: (\frac{1}{r}, y) \rightarrow \cos p = \frac{1}{r} \rightarrow \sin^2 + \cos^2 = 1 \rightarrow \frac{1}{r^2} + \sin^2 = 1 \rightarrow \sin^2 = \frac{r^2-1}{r^2}$$

$$\sin p = \frac{\sqrt{r^2-1}}{r}$$

$$\sin = \frac{\sqrt{3}}{4} \rightarrow P: (\frac{1}{4}, \frac{\sqrt{3}}{4}) \rightarrow P = \frac{\pi}{6}$$

۲۱ درجه
ضلع قائمه



$$\rightarrow P^2: 1 + 1 - 2 \times \frac{1}{4} \times \frac{\sqrt{3}}{4} \rightarrow P^2: 2 - \frac{\sqrt{3}}{2} \rightarrow P^2: 2 - \frac{\sqrt{3}}{2}$$

ایست ۲ است

نقطه ایست ۲
بهره

نقطه ایست ۲

ضلع قائمه

$$\rightarrow \frac{1}{9} \times \frac{180}{n} = 20^\circ$$

نسبت دایره

$$\rightarrow 2 \times 20 = 40 \rightarrow \text{ایست } 2:40$$

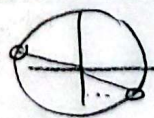
$$\left| \frac{11M}{F} - 90 \right| \xrightarrow{\frac{3 \text{ Cyl}}{H_2O}} 20 \rightarrow \left| \frac{11M}{F} - 90 \right|$$

$$\frac{11M}{F} = 110 \rightarrow M = 20$$

$$\frac{11M}{F} = 70 \rightarrow M = \frac{140}{11} \approx 12.72$$

نسبت دایره
نسبت دایره

$$-\frac{\pi}{4} < \alpha < \frac{\pi}{4}$$



$$\sin \alpha = \frac{m-3}{5} \rightarrow -\frac{1}{5} < \frac{m-3}{5} < \frac{1}{5} \rightarrow -\frac{5}{5} < m-3 < \frac{5}{5}$$

$$-\frac{1}{5} < m < 1 \rightarrow \text{مربع اول}$$

$$\frac{\sin(10^\circ) + u \cos(10^\circ)}{\cos(40^\circ) + r \sin(10^\circ)} = \mu \rightarrow \frac{\sin(90^\circ + 10^\circ) + u \cos(180^\circ - 10^\circ)}{\cos(180^\circ - 40^\circ) + r \sin(180^\circ + 10^\circ)} = \mu$$

$$\rightarrow \frac{+ \cos 10^\circ - u \sin 10^\circ}{+ \cos 10^\circ - r \sin 10^\circ} = \mu \xrightarrow{\div \cos 10^\circ} \frac{-1 + u \tan 10^\circ}{-1 + r \tan 10^\circ} = \mu \xrightarrow{\tan 10^\circ = 0.1736}$$

$$\frac{-1 + \frac{u}{E}}{\frac{-1 + r}{E}} = \mu \Rightarrow \boxed{u = r} \quad \checkmark$$

$$\frac{1 - \cos \alpha}{1 + \cos \alpha} = r \rightarrow r + \cos \alpha = 1 - \cos \alpha \rightarrow r \cos \alpha = -1 \rightarrow \cos \alpha = -\frac{1}{r}$$

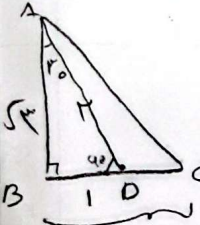

$$\rightarrow r^2 = 1 + 9 \rightarrow r = \sqrt{10} \rightarrow \tan \alpha = \frac{3}{1} \cot \alpha = \frac{1}{3}$$

$$\frac{\tan(\frac{\pi}{2} - \alpha) - \cot(\pi - \alpha)}{\cot(\frac{\pi}{2} - \alpha) + r \tan(\pi - \alpha)} = \frac{+\cot \alpha + \cot \alpha}{+\tan \alpha - r \tan \alpha} = \frac{r \cot \alpha}{- \tan \alpha}$$

$$= -r \frac{\frac{1}{\sqrt{10}}}{\frac{1}{\sqrt{10}}} = -r \times \frac{1}{1} = -\frac{1}{E} \quad \checkmark$$

$$A \propto 1 \cdot n \times \frac{n}{n} = \frac{kn}{\omega} \xrightarrow{\text{work done}} \alpha_A R_A, \alpha_B R_B \rightarrow \frac{r}{10} \times R_A, \frac{r}{10} \times R_B$$

$$B \propto \frac{qn}{10} \rightarrow \frac{R_A}{R_B} = \frac{\mu}{r} \rightarrow \frac{(R_A)^r}{(R_B)^r} = \frac{q}{E} \xrightarrow{\frac{1}{r} \times n} \frac{n R_A^r}{R R_B^r} = \frac{q}{E} = \frac{S_A}{S_B} \quad \checkmark$$



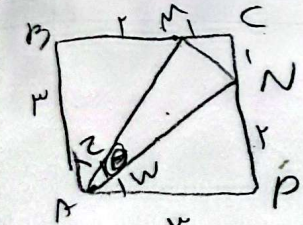
$$S_{ABC} = \sqrt{r}$$

$$\rightarrow \sin 40^\circ = \frac{1}{AD} = \frac{1}{r} \rightarrow AD = r, \sin 40^\circ = \frac{\sqrt{r}}{r} = \frac{AB}{r} \rightarrow AB = \sqrt{r}$$

$$S_{ABC} = \frac{AB \cdot BC}{2} = \sqrt{r} \rightarrow \frac{\sqrt{r} \times BC}{2} = \sqrt{r} \rightarrow BC = 2$$

$$\overline{AC}^2 = \overline{AB}^2 + \overline{BC}^2 - 2 \cdot AB \cdot BC \cdot \cos C \rightarrow r + E = AC^2 \rightarrow AC = \sqrt{r} \rightarrow \sin C = \frac{\sqrt{r}}{\sqrt{r}} \cos C = \frac{r}{\sqrt{r}}$$

$$\sin C = r \sin C \cos C = r \times \frac{\sqrt{r}}{\sqrt{r}} \times \frac{r}{\sqrt{r}} = \frac{E \sqrt{r}}{\sqrt{r}} \quad \checkmark$$



$$\sin \theta = \sin\left(\frac{\pi}{2} - (2 + w)\right) = \cos(2 + w)$$

$$= \cos 2 \cos w - \sin 2 \sin w$$

$$\rightarrow AB^2 + BM^2 - AM^2 \rightarrow 9 + E = AM^2 \rightarrow AM = \sqrt{r} \rightarrow \sin 2 = \frac{r}{\sqrt{r}}$$

$$\rightarrow NP^2 + AP^2 - AN^2 \rightarrow 9 + E = AN^2 \rightarrow AN = \sqrt{r} \rightarrow \cos 2 = \frac{r}{\sqrt{r}}$$

$$\rightarrow \sin \theta = \frac{9}{1r} - \frac{r}{1r} = \frac{8}{1r} \quad \checkmark$$