

نام و نام خانوادگی: رضا موسوی

پایه نهم ششم ترم اول ۱۹۰

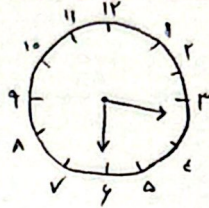
موضوع: هندسه

۲۰



الف) $4 \times 30 + 4 \times 6 + 30 - 27 = 20.7$

ب) $|5/5 \text{ min} - 30 \text{ h}| = |5/5 \times 54 - 30 \times 3| = 20.7$



الف) $2 \times 30 + 2 \times 6 + 9 = 11$

ب) $|5/5 \text{ min} - 30 \text{ h}| = |5/5 \times 18 - 30 \times 6| = 11$

الف) $S = \frac{a}{r} R^2 = \frac{\pi}{12} \times 9 = \frac{3\pi}{4}$

ب) $P = aR + rR = \frac{\pi}{4} \times 3 + 6 = \frac{\pi}{4} + 6$

الف) $S = \frac{1}{2} \overline{AB} \times \overline{AC} \times \sin A = \frac{1}{2} \times 5 \times 8 \times \sin \frac{\pi}{6} = 10\sqrt{3}$

ب) $\overline{BC} = \sqrt{\overline{AB}^2 + \overline{AC}^2 - 2\overline{AB} \times \overline{AC} \times \cos A} = \sqrt{25 + 64 - 40} = 5$ $P = 5 + 5 + 8 = 18$

$B + C = 150^\circ \rightarrow A = 30^\circ$

$\frac{10}{\sin 30^\circ} = \frac{10\sqrt{3}}{\sin B} \rightarrow \sin B = \frac{\sqrt{3}}{2} \rightarrow B = 60^\circ \rightarrow C = 90^\circ \rightarrow B = \frac{\pi}{3}, C = \frac{\pi}{2}$

$\frac{\tan(\pi - a) + r \tan(\pi + a)}{\tan(2\pi - a) - \tan(2\pi + a)} = \frac{-\tan a + r \tan a}{-\tan a - \tan a} = \frac{r \tan a}{-2 \tan a} = \boxed{-1}$

$$\tan \frac{\pi}{1r} = \tan 1a^\circ = a$$

$$\frac{r \tan_{140^\circ} + \tan_{100^\circ}}{r \tan_{140^\circ} + \tan_{140^\circ}} = \frac{r \tan(\frac{\pi}{r} - 1a) + \tan(\frac{\pi}{r} + 1a)}{r \tan(\pi - 1a) - \tan(\frac{r\pi}{r} - 1a)} = \frac{r \cot 1a - \cot 1a}{-r \tan_{1a} - \cot_{1a}} = \frac{\cot 1a}{-r \tan_{1a} - \cot_{1a}}$$

$$\frac{\frac{1}{a}}{-ra - \frac{1}{a}} = \frac{\frac{1}{a}}{\frac{-ra - 1}{a}} = \frac{1}{-ra - 1}$$

$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = r$$

$$\frac{(\sin x + \cos x)^r + (\sin x - \cos x)^r}{(\sin x - \cos x)(\sin x + \cos x)} = \frac{r \sin^r x + r \cos^r x}{\sin^r x - \cos^r x} = \frac{r}{r \sin^r x - 1} = r$$

$$r \sin^r x - 1 = \frac{r}{r} \leadsto \sin^r x = \frac{2}{r}, \cos^r x = \frac{1}{r} \leadsto \tan^r x = \frac{2}{1} \div \frac{1}{r} = \boxed{2r}$$

$$\frac{\sin^r x - r \cos^r x + 1}{\sin^r x + r \cos^r x - 1} = r \leadsto \frac{\sin^r x - \cos^r x + (1 - \cos^r x)}{\sin^r x + \cos^r x + (\cos^r x - 1)} = \frac{r \sin^r x - \cos^r x}{\cos^r x} = r \tan^r x - 1 = r$$

$$\tan^r x = \frac{2}{r}$$

$$\text{c) } \cos(r, a) = \frac{\sqrt{r+r}}{r}$$

$$\cos_{ca} = \cos^r_{r, a} - \sin^r_{r, a} = \cos^r_{r, a} - 1 + \cos^r_{r, a} = r \cos^r_{r, a} - 1 = \frac{\sqrt{r}}{r}$$

$$\cos^r_{r, a} = \frac{\sqrt{r+r}}{r} \leadsto \cos_{r, a} = \frac{\sqrt{r+r}}{r}$$

$$\text{b) } \sin_{(y, a)} = \sin(\frac{\pi}{r} - r, a) = \cos_{r, a} = \frac{\sqrt{r+r}}{r}$$

$$\cos_{ca} = \cos^r_{r, a} - \sin^r_{r, a} = \cos^r_{r, a} - 1 + \cos^r_{r, a} = r \cos^r_{r, a} - 1 = \frac{\sqrt{r}}{r}$$

$$\cos_{r, a} = \frac{\sqrt{r+r}}{r}$$