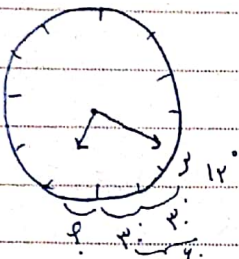


$$4 + 30 + 30 + 30 + 30 + 2V = 103$$

سوال 1

$$103 \leftarrow 2 \cdot V \quad | -2 \cdot V | = | 0.0 \times 0.0 - 3 \times 30 | \leftarrow | 0.0 \text{ m} - 30 \cdot H |$$

سوال 2



$$V_2 + 9 = 100 \quad (\text{الب})$$

$$11 \leq \left(\frac{0.0 \text{ m} - 0 \cdot H}{11} \right) \quad (\text{ب})$$

سوال 3

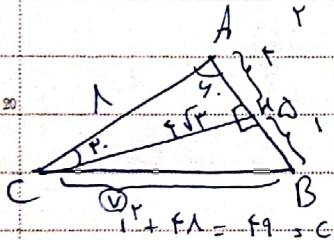


$$|AB| = \alpha R = \frac{\alpha}{r} \times 3 \times \frac{a}{r} =$$

$$3 + 3 + \frac{a}{r} = 4 + \frac{a}{r} \Rightarrow (-)$$

$$\frac{\alpha}{r} R^2 \Rightarrow \frac{a}{r} \times 3^2 \times \frac{a}{14^2} \times 9^2 \times \frac{3a}{2}$$

سوال 4



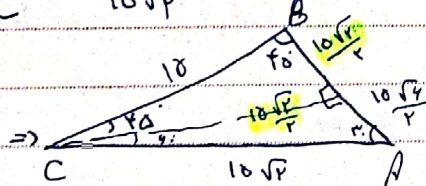
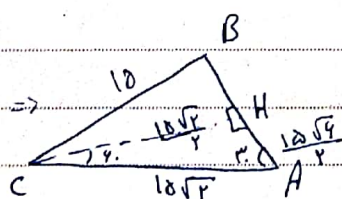
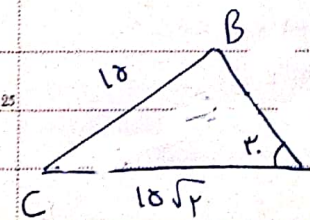
$$CH = \frac{4^2}{14} + \frac{CH^2}{14} = 9^2$$

$$CH \leq \sqrt{41} = 2\sqrt{11}$$

$$\frac{1}{r} \times 0 \times \frac{r}{r} \times \sin 4 = 10\sqrt{r} = (\text{الب})$$

$$2 + 1 + V = 20 \quad (-)$$

سوال 5



$$\Rightarrow \left(\frac{10\sqrt{r}}{r} \right)^2 + r^2 = 10^2$$

$$r^2 = 112.0$$

$$r = \frac{10\sqrt{r}}{r}$$

$$C = 100^\circ \quad B = 30^\circ$$

$$A = 30^\circ$$

$$\frac{r}{11} = \frac{10\sqrt{r}}{r} \Rightarrow \frac{a}{2}$$

$$\frac{1.0}{11.1} \leq \frac{10\sqrt{r}}{r} \rightarrow \frac{va}{11}$$

Arman



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



$$\tan \frac{\pi}{12} = a$$

$$\tan \frac{\pi}{12} = \tan \pi = a = -\frac{r}{2}$$

$$\frac{r \tan 15^\circ + \tan 105^\circ}{r \tan 140^\circ - \tan 170^\circ}$$

$$\tan 15^\circ = \cot 15^\circ \cdot \frac{1}{\tan 15^\circ} = \frac{1}{a}$$

$$\tan 105^\circ = \tan(90^\circ + 15^\circ) = -\cot 15^\circ = -\frac{1}{a} \Rightarrow \frac{\frac{2}{a} - \frac{1}{a}}{3a - \frac{1}{a}} = \frac{\frac{1}{a}}{3a - \frac{1}{a}} = \frac{1}{3a^2 - 1}$$

$$\tan 255^\circ = \tan(180^\circ + 75^\circ) = \tan 75^\circ = \frac{1}{a}$$

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

$$\tan^2 \alpha = ?$$

$$\frac{\sin^2 \alpha + \cos^2 \alpha + r \sin \alpha \cos \alpha + \sin^2 \alpha + \cos^2 \alpha - r \sin \alpha \cos \alpha}{\sin^2 \alpha - \cos^2 \alpha} = r$$

$$r \sin^2 \alpha - r \cos^2 \alpha = r \sin^2 \alpha + r \cos^2 \alpha \Rightarrow 2 \cos^2 \alpha = \sin^2 \alpha$$

$$\frac{\sin^2 \alpha}{\cos^2 \alpha} = 2$$

$$\frac{\sin^2 \alpha - r \cos^2 \alpha + 1}{\sin^2 \alpha + r \cos^2 \alpha - 1} = r$$

$$\tan^2 \alpha = ?$$

$$\frac{1 - \cos^2 \alpha - r \cos^2 \alpha + 1}{1 - \cos^2 \alpha + r \cos^2 \alpha - 1} = r$$

$$\frac{-r \cos^2 \alpha + r}{\cos^2 \alpha} = r \Rightarrow -r \cos^2 \alpha + r = r \cos^2 \alpha \Rightarrow \cos^2 \alpha = 1$$

$$1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \Rightarrow 1 + \tan^2 \alpha = \frac{1}{r}$$

$$\cos(4\pi/8) \cos^2 \alpha = \frac{1 + \cos 4\pi/8}{r} = \frac{\sqrt{r+1}}{r} = \sqrt{\frac{r+1}{r}}$$

$$\sin(4\pi/8)$$

$$\sin^2 \alpha = \frac{1 - \cos 4\pi/8}{r} = \frac{1 - \sqrt{r}}{r} = \sqrt{\frac{r - \sqrt{r}}{r}}$$

Arman