

$$\varepsilon \times 30 = 120$$

$$\frac{1}{7} \times \Delta \varepsilon = 27$$

$$120 + 27 + 7 = 154$$

$$360 - 154 = 206$$

(الف)

$$\Delta \varepsilon_{\min} - 206 \Rightarrow \frac{1}{7} \times \Delta \varepsilon - 30 \times 3 = 206 \quad 360 - 206 = 154$$

(ب)

$$\frac{\pi}{4} = 30 \quad \frac{30}{360} = \frac{1}{12} \quad S = 2R^2 \Rightarrow 9\pi m^2 \quad \frac{1}{12} \times 9\pi = \frac{3\pi}{4} \rightarrow S$$

$$P = 2\pi R \rightarrow 4\pi \quad 4\pi \times \frac{1}{12} = \frac{\pi}{3} \quad \frac{\pi}{3} + 7$$

(الف)

(ب)

$$2 \times 30 = 60 \quad 2 \times 4 = 8 \quad 18 \times \frac{1}{4} = 9 \quad 12 + 9 + 60 = 81$$

$$\alpha = \left| \frac{11}{4} \min - 30 \times h \right| \Rightarrow \left| \frac{11}{4} \times 18 - 30 \times 4 \right| = |99 - 120| = 21$$

(الف)

(ب) سوال ٢

$$\frac{\Delta \times 1 \times \sqrt{3}}{2} = 10\sqrt{3} \Rightarrow S$$

$$BC = \sqrt{12 + 48 - 10 \times \cos 40} = \sqrt{19 - \varepsilon} = \sqrt{\varepsilon 9} = V \quad D = V + \Delta + 1 = 20$$

سوال ٣

$$\frac{10}{\sin A} = \frac{18\sqrt{2}}{\sin B} = \frac{AB}{\sin C}$$

$$\frac{10}{\frac{1}{2}} = 20 = \frac{18\sqrt{2}}{\frac{\sqrt{2}}{2}} \Rightarrow B = 45^\circ \quad C = 180 - 45 = 135^\circ$$

$$\frac{\pi}{\varepsilon}, \frac{\pi}{4}, \frac{13\pi}{12}$$

$$\frac{-\tan \alpha + r \tan \alpha}{-\tan \alpha - \tan \alpha} = -\frac{r \tan \alpha}{r \tan \alpha} = -1$$

①

$$\frac{r \tan\left(\frac{\pi}{r} - \frac{\pi}{1r}\right) + \tan\left(\frac{\pi}{r} + \frac{\pi}{1r}\right)}{r \tan\left(\pi - \frac{\pi}{1r}\right) + \tan\left(\frac{\pi}{r} + \frac{\pi}{1r}\right)} = \frac{r \frac{1}{a} - \frac{1}{a}}{-ra - \frac{1}{a}} = \frac{\frac{1}{a}}{\frac{-ra^2 - 1}{a}} = \frac{1}{ra^2 - 1} \Rightarrow h = \frac{-1}{ra^2 + 1}$$

①

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

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

①

$$r \sin^2 x + 1 \cos^2 x - \epsilon = \sin^2 x - r \cos^2 x + 1 \quad r \sin^2 x + r \cos^2 x + r \cos^2 x = a$$

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

✓

①

$$\cos(r, \Delta) = \sqrt{\frac{1 + \cos \epsilon \Delta}{r}} = \frac{1 + \sqrt{r}}{r} = \frac{\sqrt{r} + \sqrt{r}}{r} \quad \checkmark$$

$$\sin^2 4V, \Delta = \sqrt{\frac{1 - \cos \epsilon \Delta}{r}} = \sqrt{\frac{1 - \sqrt{r}}{r}} = \frac{\sqrt{r} - \sqrt{r}}{r} \quad \checkmark$$

①