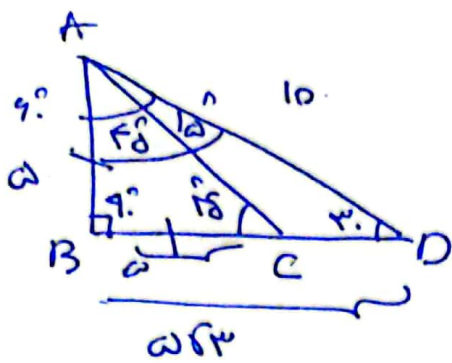




$$AB = BC \quad BD = \frac{(10 \times 10)}{2} = 50$$

$$AB = \frac{1}{2} \times 10 = 5$$

$$BC - BC = CD$$

$$a(\sqrt{2}-1) = CD$$

← 1 سوال

$$\text{الف) } r\omega = (\alpha) \text{ rad}$$

$$\frac{r\omega}{r_0\omega_0} = \frac{\alpha}{\pi} = \frac{r}{r_0} = \frac{\alpha}{\pi}$$

$$\boxed{\frac{r\omega}{r_0} = \alpha}$$

$$\text{ب) } r\omega = (\alpha) \text{ rad}$$

$$\frac{r\omega}{r_0\omega_0} = \frac{\alpha}{\pi} = \frac{r\omega}{r_0\omega_0} = \frac{\alpha}{\pi}$$

$$\text{ج) } \frac{\omega}{12} \text{ rad} = (\alpha)^\circ$$

$$\frac{\omega}{12} = \frac{\alpha}{180} = \frac{\omega}{12} = \frac{\alpha}{180} = \frac{\omega \times 180}{12 \times \alpha} = \frac{\omega}{\alpha} = \frac{\alpha}{180} \Rightarrow \boxed{\omega = \alpha}$$

$$\text{د) } \frac{r\omega}{9} \text{ rad} = (\alpha)^\circ = \frac{r\omega}{9} = \frac{\alpha}{180} = \frac{r}{9} = \frac{\alpha}{180}$$

$$\frac{r\omega}{9} = \alpha = \frac{r\omega}{9} = \alpha \Rightarrow \boxed{\omega = \alpha}$$

$$10a \quad \frac{12a}{9} \quad \frac{12a}{9}$$

سوال ۲ ✓

$$\frac{\frac{12a}{9}}{\frac{200}{1}} = \frac{a}{110} \Rightarrow \frac{\frac{12a}{9}}{200} = \frac{a}{110} \Rightarrow \frac{12a}{1800} = \frac{a}{110} \Rightarrow \frac{12}{1800} = \frac{1}{110}$$

$$\frac{12a \times 110}{1800} = a = \frac{12a}{15} = a \quad 12/15 a = a$$

$$\frac{\frac{a}{1}}{\frac{1}{1}} = \frac{a}{110} \Rightarrow \frac{a}{1} = \frac{a}{110}$$

$$\frac{\frac{12a}{9}}{1} = \frac{12a}{9} = 12/9 a = 4/3 a$$

$$12/9 a + 12/9 a + 10a = 11$$

$$a(12/9 + 12/9 + 10) = 11 \quad a = \frac{11 \times 9}{24} = 4 \quad \boxed{a=4}$$

سوال ۲

$$-\sin 30^\circ \cos 40^\circ + \cos 30^\circ \sin 40^\circ = \sin \theta$$

$$\cos 10^\circ = \sin \theta$$

$$-\frac{1}{2} + \frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{2} = \frac{1}{2} \quad \sin \theta = \frac{1}{2}$$

$$\tan \theta = +1$$

$$\tan \theta = 1$$

$$\frac{\sin \theta - \cos \theta}{\sin \theta - \cos \theta}$$

$$\frac{12a - a}{12a - a} = \frac{11a(1-1)}{11a(1-1)} = \boxed{1}$$

$$\frac{\sin \theta}{\cos \theta} = 1 \Rightarrow \sin \theta = \cos \theta \quad \cos \theta = 1$$

$$\frac{r \tan 40^\circ (1 - \tan^2 40^\circ)}{(1 - \cot^2 40^\circ)^2}$$

$$= \frac{r \times \frac{1}{r} \left(1 - \frac{1}{r}\right)}{\left(1 - \frac{1}{r}\right)^2}$$

$$= \frac{1}{\left(1 - \frac{1}{r}\right)}$$

$$= \frac{1}{\left(1 - \frac{1}{r}\right)}$$

✓ = 100%

$$= \frac{2}{\sqrt{2}}$$

$$\frac{r}{r} = \tan \theta$$

$$\frac{r}{r} = \tan \theta = 1 \quad r = \tan \theta \quad \Rightarrow \quad \theta = 45^\circ$$

$$\frac{40}{110} = \frac{\alpha}{17} \quad \Rightarrow \quad \frac{1}{r} = \frac{\alpha}{17} \quad \Rightarrow \quad \alpha = \frac{17}{r}$$

$$\text{ii) } \underbrace{\cos 40^\circ \cos 70^\circ}_{\frac{1}{2} \times \frac{\sqrt{3}}{2}} - \underbrace{\sin 40^\circ \sin 70^\circ}_{\frac{\sqrt{3}}{2} \times \frac{1}{2}} - \frac{\tan 60^\circ}{1} + \frac{1 \tan 60^\circ}{\sqrt{3}} \quad \leftarrow = \sqrt{3} \text{ سوال}$$

$$\frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2} - 1 + 1 = \boxed{1}$$

$$\text{c) } \frac{\tan 70^\circ + \tan 60^\circ + \tan 40^\circ}{\cot 70^\circ - \cot 40^\circ} = \frac{1 + \sqrt{3} + 1}{\sqrt{3}} = \frac{2 + \sqrt{3}}{\sqrt{3}}$$

$$\sqrt{3} \left(\frac{1 - \frac{1}{\sqrt{3}}}{\frac{\sqrt{3}-1}{2}} \right) = \frac{\sqrt{3}}{2}$$

$$\tan 70^\circ = \frac{1/\sqrt{3}}{2/2} = \frac{1}{\sqrt{3}}$$

$$\tan 40^\circ = \frac{2/\sqrt{3}}{2-1} = \sqrt{3}$$

$$\frac{\sqrt{3}}{2} = \boxed{\frac{1\sqrt{3}}{2}} = \boxed{\frac{1\sqrt{3}}{2}}$$

السؤال ١٥ <

$$\tan \alpha = \frac{1}{\sqrt{3}}$$

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

$$\frac{1}{\sqrt{3}} = \frac{\sin \alpha}{\cos \alpha}$$

$$\begin{aligned} \sin \alpha &= a \\ \cos \alpha &= \sqrt{3}a \end{aligned}$$

$$a^2 = 1 - (\sqrt{3}a)^2$$

$$0 = 1 - \sqrt{3}a^2$$

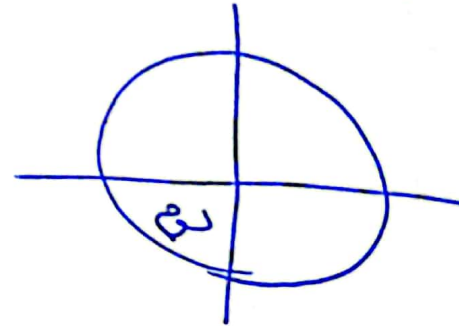
$$\sin \alpha = -\frac{1}{\sqrt{3}}$$

من هنا نحصل على

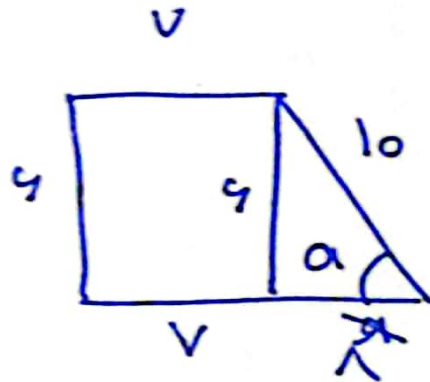
$$0 = (1 - \sqrt{3}a)(1 + \sqrt{3}a)$$

$$a = \frac{1}{\sqrt{3}} \quad \text{أو} \quad a = -\frac{1}{\sqrt{3}}$$

$$a = -\frac{1}{\sqrt{3}} <$$



سوال ۷ ✓

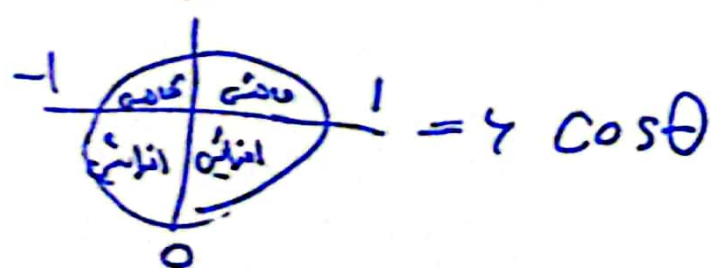
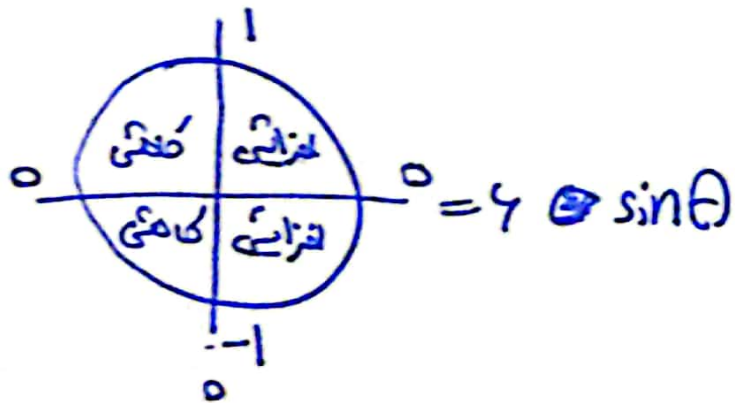


$$\sin a = \frac{4}{5}$$

$$\frac{4}{5} \times 1 = 4$$

$$100 - 34 = 66 = 4 \times 1 = 4 \quad 9 = 1$$

$$4 + 1 + 1 + 10 + 1 = 31$$



سوال ۹ ✓

الف) ناصیه برع

ب) ~~خزانة~~ دوق