

$$\text{الف)} \quad 27 \times \frac{\pi}{180} = \frac{27\pi}{180} = \frac{9\pi}{4} = \frac{3\pi}{2}$$

$$\text{ب)} \quad 125 \times \frac{\pi}{180} = \frac{125\pi}{36}$$

$$\text{ج)} \quad \frac{5\pi}{12} \times \frac{180}{\pi} = 75^\circ$$

$$\text{د)} \quad \frac{4\pi}{9} \times \frac{180}{\pi} = 80^\circ$$

$$\frac{\frac{125a}{9}}{\frac{200}{1}} = \frac{D}{180} \Rightarrow D = \frac{\frac{125a}{9} \times 180}{200} = \frac{125a}{1} = 125a$$

$$125a + 22.5a + 10a = 180^\circ$$

$$157.5a = 180^\circ \Rightarrow a = 1.14^\circ$$

$$\frac{9\pi}{4} \times \frac{180}{\pi} = 405^\circ$$

$$\text{الف)} \quad \left(\frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} \right) - \left(\frac{\sqrt{2}}{2} \times \frac{1}{\sqrt{2}} \right) - (1+2) = -3$$

$$\text{ب)} \quad \frac{\frac{1}{\sqrt{2}} + 1 + 2}{\frac{\sqrt{2}}{2} - \frac{1}{\sqrt{2}}} = \frac{3 + \frac{1}{\sqrt{2}}}{\frac{\sqrt{2}-1}{2}} = \frac{\frac{3\sqrt{2}+1}{\sqrt{2}}}{\frac{\sqrt{2}-1}{2}} = \frac{2(3\sqrt{2}+1)}{\sqrt{2}-1}$$

$$\left(\frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} \right) + \left(\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} \right) = \sin^2 \theta \Rightarrow \sin^2 \theta = \frac{1}{2}$$

$$\sin \theta = \frac{1}{\sqrt{2}}, \theta < 90^\circ \Rightarrow \theta = 45^\circ$$

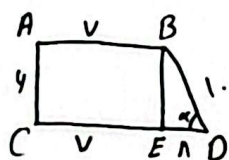
$$\tan 45^\circ = \frac{1}{1} = 1$$

$$\frac{2 \tan 45^\circ (1 - \tan^2 45^\circ)}{(1 - \cot^2 45^\circ)^2} = \frac{2 \tan 45^\circ}{1 - \cot^2 45^\circ} = \frac{2}{1 - 1} = \frac{2}{0} = \infty \Rightarrow \tan \theta = \infty \Rightarrow \theta = 90^\circ$$

$$\tan = \frac{\sin}{\cos} \Rightarrow \sin = \tan \cos$$

$$\frac{3\sin\theta - \cos\theta}{\sin\theta - \varepsilon\cos\theta} = \frac{3\tan\theta\cos\theta - \cos\theta}{\tan\theta\cos\theta - \varepsilon\cos\theta} = \frac{1\varepsilon\cos}{\cos} = 1\varepsilon$$

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$$\sin \alpha = \frac{4}{5} \Rightarrow \cos = 1$$

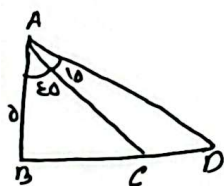
$$bd = 1$$

$$Ed^2 = 1^2 - 4^2 \Rightarrow Ed = 1$$

$$\text{محيط} = (2 \times 4) + 4 + 1 + 1 = 10$$

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$$BD \Rightarrow \sin = \frac{\text{مقابل}}{\text{وتر}} , \sin 40^\circ = \frac{\sqrt{3}}{2} \Rightarrow \frac{BD}{AD} = \frac{\sqrt{3}}{2} \Rightarrow BD = \sqrt{3} \quad AB = 0$$



$$BC \Rightarrow \tan = \frac{\text{مقابل}}{\text{جانب مجاور}} = \frac{BC}{AD} \Rightarrow \tan \varepsilon = 1 \Rightarrow BC = AB$$

$$BC = 5 \Rightarrow DC = BD - BC = 5\sqrt{3} - 5$$

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$$\text{الف) } \cos \uparrow \Rightarrow 3, \varepsilon, \sin \downarrow \Rightarrow 2, 3 \Rightarrow 3$$

$$\text{ب) } \sin \downarrow \Rightarrow 3, 2, \cos \downarrow \Rightarrow 2, 1 \Rightarrow 2$$

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$$\tan \alpha = \frac{1}{3} \Rightarrow \frac{\sin}{\cos} = \frac{1}{3} \Rightarrow \cos = 3\sin$$

$$\sin^2 + \cos^2 = 1$$

$$\sin^2 + (3\sin)^2 = 1$$

$$1 \cdot \sin^2 = 1 \Rightarrow \sin^2 = \frac{1}{10} \Rightarrow \sin = \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$

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