



$$I' = 6^\circ$$

$$90 + 39 + 27 = 156^\circ$$

آخر يسا 156

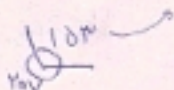
① الف

$$6 \times 9 = 54^\circ \quad 10 \times 9 = 90^\circ$$

$$\begin{array}{r|l} 90^\circ & 130^\circ \\ \hline 54^\circ & 147^\circ \end{array}$$

$$\alpha = |\delta, \delta M - 36 H| = |(51 \times 9) - (30 \times 3)| = 20 V$$

ب



$$7 \times 9 = 63^\circ$$

$$10 \times 9 = 90^\circ$$

$$\begin{array}{r|l} 90^\circ & 130^\circ \\ \hline 63^\circ & 9^\circ \end{array}$$

$$12 + 60 + 9 = 111$$

② الف

$$\alpha = |(8, \delta \times 11) - (9 \times 60)| = 110 - 99 = 11^\circ$$

ب

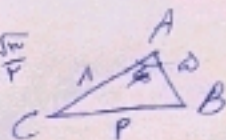
$$A \quad B \quad \frac{\pi}{r} R^2 S = \frac{\pi \times 9}{r} = \frac{9\pi}{r} \times \frac{1}{r} = \frac{9\pi}{r^2}$$

③ الف

$$L = aR + rR = \frac{\pi}{r} \times r^2 + r = \frac{\pi}{r} + r$$

ب

$$\sin 60^\circ = \frac{\sqrt{3}}{2}$$



$$S = \frac{1}{2} ab \sin C = \frac{1}{2} \times a \times b \times \frac{\sqrt{3}}{2} = 10\sqrt{3}$$

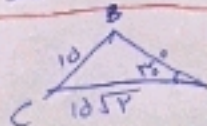
④ الف

$$\cos 60^\circ = \frac{1}{2}$$

$$P = \sqrt{a^2 + b^2 - 2ab \cos \alpha} = \sqrt{1^2 + 2^2 - 2(1)(2)(\frac{1}{2})} = \sqrt{2} = \sqrt{2}$$

ب

$$L = 5 + 1 + V = 20$$



$$\sin 60^\circ = \frac{1}{2}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} \Rightarrow \frac{1}{\frac{1}{2}} = \frac{10\sqrt{3}}{\sin B} = \frac{\sqrt{3}}{\sin B}$$

⑤ الف

$$C = \frac{108\pi}{180} = \frac{3\pi}{5}$$

$$B = \frac{\pi}{5}$$

$$38^\circ \leftarrow \alpha > \beta$$

$$C = 180 - 38 = 142^\circ$$

لا حول ولا

$$\frac{\tan 2\alpha}{\tan -\alpha} = \textcircled{-1}$$

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$$\tan -\alpha = (\alpha - \pi) \tan \alpha \dots \dots$$

$$\tan 1\delta = \frac{\pi}{1\gamma} = \alpha \quad \frac{1}{\alpha} = \cot 1\delta = \tan 2\delta$$

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$$-\frac{1}{\alpha} = -\cot 1\delta = \tan 1\delta \quad -\alpha = \tan 1\delta \quad \frac{1}{\alpha} = \tan 2\delta$$

$$A = \frac{\frac{1}{\alpha} + (-\frac{1}{\alpha})}{-\frac{1}{\alpha} - \frac{1}{\alpha}} = \textcircled{\frac{1}{1 + 1}}$$

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$$\cos \frac{\alpha}{\gamma} = \sqrt{\frac{1 + \cos \alpha}{\gamma}} =$$

$$= \sqrt{\frac{\sqrt{\gamma} + 1}{\gamma}} = \textcircled{\frac{\sqrt{\gamma} + 1}{\gamma}}$$

$$2\gamma, \delta = 2\gamma, \delta$$

(الف)

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$$\cos 2\gamma, \delta = \sin \gamma, \delta$$

$$= \textcircled{\frac{\sqrt{\gamma} + 1}{\gamma}}$$

$$90 - 2\gamma, \delta = \gamma, \delta$$

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