

الف) $\frac{2V}{180} = \frac{Rad}{\pi} = \frac{2V}{\pi} \times \frac{\pi}{180} = \frac{2V}{180}$

ب) $\frac{125}{180} = \frac{Rad}{\pi} = \frac{125\pi}{180} = \frac{25\pi}{36}$ $\frac{5\pi}{12} = \frac{D}{180} \Rightarrow D = \frac{180 \times 5\pi}{12} = 75^\circ$

د) $\frac{D}{180} = \frac{Rad}{\pi} \Rightarrow \frac{\pi D}{180} = \frac{6 \times 180}{9} = 120^\circ$

$\frac{G}{200} = \frac{P}{180}$ $\frac{145a}{180} = \frac{D}{180} \Rightarrow D = \frac{25a}{2}$

$\frac{20a + 25a + 15a}{2} = 180$

$\frac{Rad}{\pi} = \frac{P}{180}$
 $\rightarrow 10a$

$\frac{a}{A} = \frac{D}{180} \rightarrow D = \frac{15a}{2}$

$\frac{90a}{2} = 180 \rightarrow a = 4$

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

ب) $\frac{\left(\frac{\sqrt{2}}{2}\right)^2 + 1 + \left(\frac{\sqrt{2}}{2}\right)^2}{\sqrt{2} - \frac{\sqrt{2}}{2}} = \frac{\frac{1}{2} + 1 + \frac{1}{2}}{\frac{2\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} = \sqrt{2}$

$-\left(\frac{1}{2} \times \frac{1}{2}\right) + \left(\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2}\right) = -\frac{1}{4} + \frac{2}{4} = \frac{1}{4} = \sin^2 \theta \rightarrow \sin \theta = \pm \frac{\sqrt{2}}{2} \rightarrow \theta = 45^\circ, 135^\circ$
 $\tan \theta = -1$

$\frac{2 \times \frac{\sqrt{2}}{2} (1 - (\frac{\sqrt{2}}{2})^2)}{(1 - (\frac{\sqrt{2}}{2})^2)^2} = \frac{2 \times \frac{\sqrt{2}}{2} \times \frac{1}{2}}{(\frac{1}{2})^2} = \frac{\sqrt{2}}{\frac{1}{4}} = 4\sqrt{2} = \tan \theta \rightarrow \theta = 20^\circ$

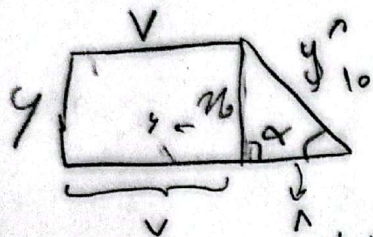
$\frac{40}{180} = \frac{Rad}{\pi} \rightarrow Rad = \frac{\pi}{9}$

$$\frac{\sin \theta}{\cos \theta} = \frac{a}{1}$$

$$\frac{(3 \times a) - 1}{a - (1 \times 1)} = \frac{12}{1} = 12$$

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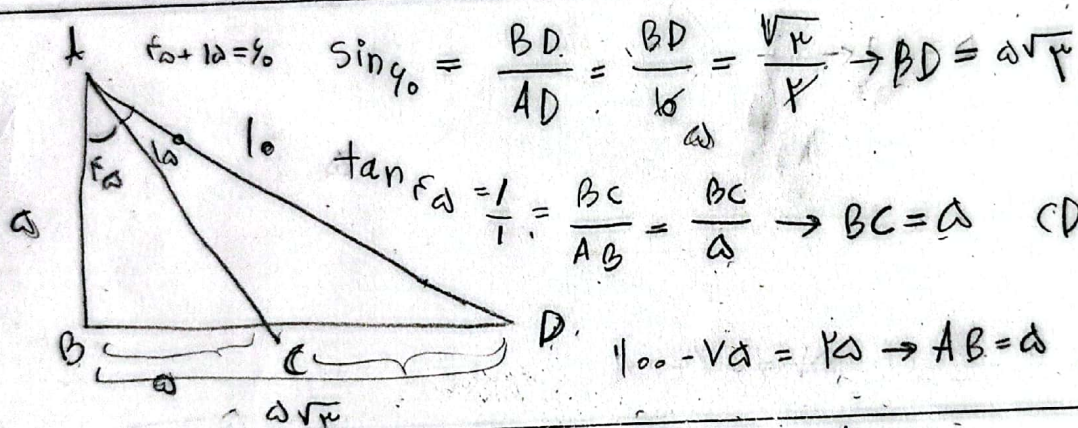
$$\frac{x_0}{y} = \frac{4}{10} = \frac{4}{y} \rightarrow y = 10$$



$$100 - 34 = 66 \rightarrow 1$$

$$4 + 3 + 10 + 3 + 1 = 21$$

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$$\sin 40^\circ = \frac{BD}{AD} = \frac{BD}{10} = \frac{\sqrt{3}}{2} \rightarrow BD = 5\sqrt{3}$$

$$\tan 40^\circ = \frac{1}{1} = \frac{BC}{AB} = \frac{BC}{10} \rightarrow BC = 10 \quad CD = 5\sqrt{3} - 10 = 5(\sqrt{3} - 2)$$

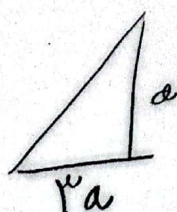
$$100 - 10a = 10 \rightarrow AB = 10$$

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کاهش $\rightarrow \sin$ از 0 به 1
افزایش $\rightarrow \cos$ از 1 به 0
از 0 به 1 $\rightarrow \sin$ از 0 به 1
از 1 به 0 $\rightarrow \cos$ از 1 به 0

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$$\tan 36^\circ = \frac{\sin 36^\circ}{\cos 36^\circ} = \frac{1}{3} \rightarrow \sin^2 36^\circ + \cos^2 36^\circ = 1$$



$$(3a)^2 + a^2 = 1$$

$$9a^2 + a^2 = 1$$

$$10a^2 = 1$$

$$a^2 = \frac{1}{10}$$

$$a = \frac{1}{\sqrt{10}}$$

$$\frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$

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