

$$17^\circ = \alpha \text{ Rad} \Rightarrow \frac{17\pi}{180} \Rightarrow \boxed{\frac{17}{180}\pi}$$

$$170^\circ = \alpha \text{ Rad} \Rightarrow \frac{170\pi}{180} \Rightarrow \boxed{\frac{17\pi}{18}}$$

$$\frac{5\pi}{12} \text{ rad} = (\alpha)^\circ \Rightarrow \frac{5 \times 180}{12} \Rightarrow \boxed{75^\circ}$$

$$\frac{8\pi}{9} \text{ Rad} = (\alpha)^\circ \Rightarrow \frac{8 \times 180}{9} \Rightarrow \boxed{160^\circ}$$

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$$\frac{1700\pi}{9} \Rightarrow \frac{1700\pi}{180} = \frac{\pi}{18} \Rightarrow 1700\pi$$

$$\frac{8\pi}{9} \text{ Ra} \Rightarrow \frac{8 \times 180}{9} \Rightarrow 1776^\circ$$

$$1776\pi + 1700\pi + 1.0\pi = 3476\pi = 180^\circ \Rightarrow \pi = 180^\circ$$

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

$$\text{ب) } \frac{(\sqrt{2})^2 + 1 + (\sqrt{2})^2}{\sqrt{2} - \sqrt{2}} = \frac{\frac{1}{2} + 1 + 2}{\frac{2\sqrt{2}}{2}} \Rightarrow \frac{3.5}{\sqrt{2}} \Rightarrow \frac{14\sqrt{2}}{4} = \frac{7\sqrt{2}}{2}$$

$$-\frac{1}{2} \times \frac{1}{2} + \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} \Rightarrow -\frac{1}{4} + \frac{2}{4} \Rightarrow \frac{1}{4} = \left(\frac{1}{2} \right)^2$$

$$\sin^2 \theta = \frac{1}{4} \Rightarrow \sin \theta = \frac{\sqrt{2}}{2} \Rightarrow \begin{array}{c} \text{r} \\ \text{ } \end{array} \Rightarrow \tan \theta = 1$$

$$\text{پ) } \checkmark$$

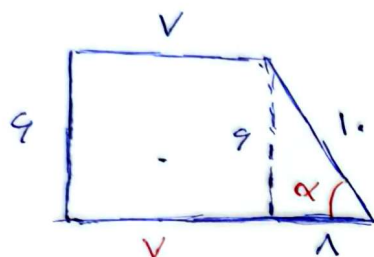
$$\frac{2 \tan 45^\circ (1 - \tan^2 45^\circ)}{(1 - \cot^2 45^\circ)} \Rightarrow \frac{\frac{2\sqrt{2}}{2} (1 - \frac{1}{2})}{(1 - \frac{1}{2}) (\frac{2}{2})} \Rightarrow \frac{\sqrt{2}}{1} = \sqrt{2}$$

$$\tan \theta = \sqrt{2} \Rightarrow \theta = 90^\circ \Rightarrow \frac{90\pi}{180} \Rightarrow \boxed{\frac{\pi}{2}}$$

$$\frac{3 \sin \theta - \cos \theta}{\sin \theta - 7 \cos \theta} \div \cos \theta \Rightarrow \frac{3 \tan \theta - 1}{\tan \theta - 7} = \frac{3(\omega) - 1}{\omega - 7}$$

$$\Rightarrow \frac{14}{1} = 14 \quad \text{پ} \quad \checkmark$$

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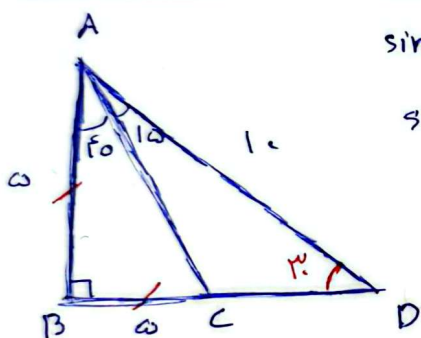


$$\sin \alpha = \frac{9}{10} \Rightarrow \frac{9}{10} = \frac{9}{10} \Rightarrow \alpha = 10$$

$$\Delta + 9 + 1 + 10 = 20 \quad \text{پ} \quad \checkmark$$

$$10^2 - 9^2 = 1^2 \quad \text{پ} \quad \checkmark$$

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$$\sin 30^\circ = \frac{AB}{AD} \Rightarrow \frac{1}{2} = \frac{AB}{AD} \Rightarrow AB = 0$$

$$\sin 60^\circ = \frac{BC}{BD} \Rightarrow \frac{\sqrt{3}}{2} = \frac{6}{BD} \Rightarrow BD = 4\sqrt{3}$$

$$CD = BD - BC \Rightarrow 4\sqrt{3} - 6 = 2(\sqrt{3} - 1) \quad \text{پ} \quad \checkmark$$

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الف) در ربع سوم $\sin$ افزایش می‌یابد و $\cos$ کاهش می‌یابد

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ب) در ربع دوم $\sin$ و $\cos$ هر دو کاهش می‌یابند

$$\tan \alpha = \frac{1}{3} \Rightarrow \text{triangle with sides } 1, 3, \sqrt{10} \Rightarrow \sin \alpha = -\frac{1}{\sqrt{10}} \Rightarrow \frac{\sqrt{10}}{10}$$

نامیه سوم

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