

19, 25

19/10/14

A کل سن و هم سیرانه

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$$2\sqrt{3} = (x) \text{ rad} \Rightarrow x = 2\sqrt{3} \times \frac{\pi}{180} = \frac{\pi}{30}$$

$$2\sqrt{3} = \frac{\pi}{30} \text{ rad (1-1)}$$

$$1\omega = (x) \text{ rad} \Rightarrow x = 1\omega \times \frac{\pi}{180} = \frac{\omega \pi}{180}$$

زاویه 27 روم خواتم!

$$\frac{\omega \pi}{12} \text{ rad} = (x) \Rightarrow x = \frac{\omega \pi}{12} \times \frac{180}{\pi} = 15\omega$$

$$\frac{\pi}{9} \text{ rad} = (x) \Rightarrow x = \frac{\pi}{9} \times \frac{180}{\pi} = 20$$

1 grad = 0.9

$$\frac{1\omega a}{a} \text{ grad} = \frac{1\omega a}{9} \times 0.9 = \frac{1\omega a}{10} = \frac{2\omega a}{2}$$

$\frac{a \pi}{180} \text{ rad}$

$$\frac{a \pi}{180} \times \frac{180}{\pi} = \frac{a}{2} \quad 10a + \frac{2\omega a}{2} + \frac{4\omega a}{2} = 180$$

$$10a + \frac{2\omega a}{2} = 180$$

$$10a = 180$$

$$a = \frac{180}{10} = 18$$

$$a = 18$$

$$\cos 90 \cos 30 - \sin 90 \sin 30 - \tan 45 + 2 \cot 45 = 1$$

$$\frac{1}{2} \times \frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2} \times \frac{1}{2} - 1 + 2(1) = 0 - 1 + 2 = 1$$

$$\frac{\tan^2 30 + \tan^2 45 + \tan^2 90}{\cot 30 - \cot 90} = \frac{\frac{1}{3} + 1 + 3}{\sqrt{3} - \frac{1}{\sqrt{3}}}$$

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

$$-\sin 30 \cos 90 + \cos 30 \sin 90 = -\frac{1}{2} \times \frac{1}{2} + \frac{\sqrt{3}}{2} \times \frac{\sqrt{3}}{2} = \frac{1}{2}$$

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

$$\cos \theta = \frac{\sqrt{2}}{2} \quad \tan = \frac{\sin \theta}{\cos \theta} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$$

$$\tan \theta = \frac{2 \tan 30 (1 - \tan^2 30)}{(1 - \cot^2 90)^2} = \frac{2 \times \frac{1}{\sqrt{3}} \times (1 - \frac{1}{3})}{(1 - \frac{1}{3})^2}$$

$$\frac{\frac{2}{\sqrt{3}}}{\frac{4}{9}} = \frac{9}{2\sqrt{3}} = \frac{3\sqrt{3}}{2}$$

$$3 \sin \theta \cos \theta = 3 (\sin \theta \cos \theta) - \cos \theta = 1 \sin \theta - \cos \theta = \frac{1}{2}$$

$$\sin \theta - \cos \theta = \frac{1}{2} \quad \frac{1 \sin \theta}{\cos \theta} = \frac{1}{2}$$

$$10^2 = 9^2 + \cos^2 \alpha \quad 100 = 81 + \cos^2 \alpha \quad \cos^2 \alpha = 19 \quad \cos \alpha = \sqrt{19} \quad \checkmark$$

$$\sin \alpha = \frac{9}{10} \quad \frac{\cos \alpha}{\sin \alpha} = \frac{10}{9} = 10 \quad \sqrt{19} + 9 + 10 + 10 = 38 \quad \checkmark$$

$$\sqrt{19} + 1 = 10$$

$$DA \perp B = 90 \quad D = 30 \quad A \perp B \perp D = 90$$

$$A \perp B = A \perp D \times \cos(60) = 10 \times \frac{1}{2} = 5$$

$$B \perp A = A \perp D \times \sin(60) = 10 \times \frac{\sqrt{3}}{2} = 5\sqrt{3}$$

$$B \perp C = A \perp B \times \tan(60) = 5 \times \sqrt{3} = 5\sqrt{3}$$

$$D \perp C = B \perp D - B \perp C = 5\sqrt{3} - 5 = 5(\sqrt{3} - 1) = 3.19 \approx 3.2 \quad \checkmark$$

$$\cos 90 = \sin \theta \cos \alpha \quad \sin 110 = \sin \theta \cos \alpha \quad \checkmark$$

$$\sin 110 = \sin \theta \cos \alpha \quad \cos 110 = \sin \theta \cos \alpha \quad \checkmark$$

$$\cos 90 = \sin \theta \cos \alpha \quad \sin 110 = \sin \theta \cos \alpha \quad \checkmark$$

$$\sin 110 = \sin \theta \cos \alpha \quad \cos 110 = \sin \theta \cos \alpha \quad \checkmark$$

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$$\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{1}{\sqrt{19}} \quad \sin^2 \alpha + \cos^2 \alpha = 1 \quad \sin \alpha = \frac{1}{\sqrt{19}} \times \cos \alpha$$

$$\left(\frac{1}{\sqrt{19}} \cos \alpha\right)^2 + \cos^2 \alpha = 1 \quad \left(\frac{1}{19}\right) \cos^2 \alpha + \cos^2 \alpha = 1$$

$$\cos^2 \alpha = \frac{9}{16} \quad \cos \alpha = \frac{3\sqrt{10}}{16}$$

$$\sin \alpha = \left(\frac{1}{\sqrt{19}}\right) \cos \alpha = \frac{1}{\sqrt{19}} \times \frac{3\sqrt{10}}{16} = \frac{-\sqrt{10}}{16} = -\frac{1}{\sqrt{16}} \quad \checkmark$$