نام و نام خانوادگی ......محمد........ پاسخنامه تشریحی تکلیف شماره ۱۵..... کلاس ......۱۲A......

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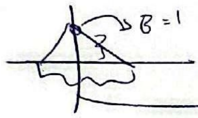
$\tan(-2x+\frac{\pi}{4})$

$\frac{1}{2}\times 1\times\frac{\pi}{2} = \frac{\pi}{4} = S_{ABC}$



$\overline{1} = \frac{\pi}{2} \Rightarrow \frac{\pi}{4} = AC$

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$\frac{4}{9} - \frac{2}{3}\sin\alpha - \frac{1}{4}\cos^2\alpha = 0 \Rightarrow \frac{2}{3}\sin\alpha + \frac{1}{4}\cos^2\alpha = \frac{4}{9} \Rightarrow 8\sin\alpha + 3\cos^2\alpha = \frac{16}{3} \Rightarrow -3\sin^2\alpha + 8\sin\alpha = \frac{7}{3}$

$-3\sin^2\alpha + 8\sin\alpha - \frac{7}{3} = 0 \Rightarrow \sin\alpha = \frac{1}{3} \Rightarrow 1+\tan^2\alpha = \frac{1}{\cos^2\alpha} \Rightarrow$

$\cos^2\alpha = 1 - \frac{1}{9} = \frac{8}{9} \Rightarrow \frac{1}{\cos^2\alpha} = \frac{9}{8}$

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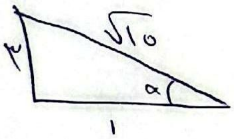
$\log_{\frac{\sin}{-\cos\alpha}} = \log^3 \Rightarrow -\tan = 3 \Rightarrow \sin\alpha > 0 \;/\; \cos\alpha < 0 \;/$



$\Rightarrow \sin\alpha - \cos\alpha = \frac{3}{\sqrt{10}} - \left(-\frac{1}{\sqrt{10}}\right) = \frac{4}{\sqrt{10}} = \frac{4\sqrt{10}}{10}$

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$\sin^4\alpha + 1 - \sin^2\alpha = \frac{4}{5} \Rightarrow \sin^4\alpha - \sin^2\alpha = \frac{-1}{5} \;/\; \sin^2\alpha(\sin^2\alpha - 1) = \sin^2\alpha\cos^2\alpha = \frac{-1}{5}$

$\cos^4\alpha + \sin^2\alpha = Z \Rightarrow \cos^4\alpha - \cos^2\alpha = Z-1 \Rightarrow \cos^2\alpha\sin^2\alpha = \frac{-1}{5} = Z-1$

$Z = \frac{4}{5} = \cos^4\alpha + \sin^2\alpha$

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$\frac{\sin x(3+\cos x)}{2(\sin^2 x)} < 0$ (+) (+) $\Rightarrow \sin x < 0$ // $\frac{\sin^2 x - 1}{\cos x} = \frac{-\cos^2 x}{\cos x} > 0$

$\cos x < 0$

ناحیه سوم

$$\frac{3\sin x + 2\cos x}{\sin x \cos x} = 0 \Rightarrow 3\sin x + 2\cos x = 0 \Rightarrow \tan x = -\frac{2}{3} \Rightarrow \cot x = -\frac{3}{2}$$

$$\tan x + \cot x = \frac{-2}{3} + \frac{-3}{2} = \frac{-13}{6}$$

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$$(1 - 2\sin^2 \omega) \Rightarrow \cos 10^\circ \;/\; (2\cos^2 10^\circ - 1) \Rightarrow \cos^2 40^\circ \;/$$

$$(\cos 10^\circ)(\cos 20^\circ)(\cos^2 40^\circ)\left(\frac{\cos^2 40^\circ - \sin^2 20^\circ}{\cos^2 40^\circ}\right) \times \frac{\sin 10^\circ}{\sin 10^\circ} \Rightarrow \frac{1}{2}\sin 20^\circ \cos 10^\circ \cos 40^\circ \Rightarrow$$

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$$\frac{1}{4}\sin 40^\circ \cos 40^\circ \Rightarrow \frac{1}{8}\sin 80^\circ \Rightarrow \frac{1}{8}\cos 10^\circ \Rightarrow \frac{\frac{1}{8}\cos 10^\circ}{\sin 10^\circ} = \frac{1}{8}\cot 10^\circ$$

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$$\sqrt{1+\cos 40^\circ} \rightarrow \sqrt{2\cos^2 20^\circ} \Rightarrow \sqrt{2}\cos 20^\circ$$

$$\frac{\sqrt{\sin\omega + 1}}{\sin\omega + \sin 10^\circ} \Rightarrow$$

$$\cos 20^\circ \Rightarrow \sqrt{2}$$

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$$\sin\omega + \cos(30^\circ + \omega) = \frac{1}{2}\sin\omega + \frac{\sqrt{3}}{2}\cos\omega = \cos(\omega - 30^\circ) = \cos(15^\circ)$$

$$\cos\omega \cdot \frac{\sqrt{3}}{2} - \frac{1}{2}\sin\omega$$

$$2\cos^2\alpha - 1 = \sin\alpha \Rightarrow 9\cos^2\alpha + 4 - 12\cos\alpha = \sin^2\alpha \overset{+\cos^2\alpha}{\Rightarrow} 10\cos^2\alpha - 12\cos\alpha + 4 = 1$$

$$\overset{-9}{\Rightarrow} 10\cos^2\alpha - 12\cos\alpha - 6 = -8 \;/\; 6\cos^2\alpha - 12\cos\alpha \Rightarrow 6(\underbrace{\cos^2\alpha - \sin^2\alpha}_{2\cos^2\alpha - 1}) \Rightarrow$$

$$10\cos^2\alpha - 12\cos\alpha - 6 = 0 \leftarrow$$

$$\rightarrow -8$$

$$\cos^2\frac{\hat{A}}{2} \Rightarrow \frac{1+\cos A}{2} = \sin B \times \sin C = \text{مثلثات} \Rightarrow \frac{1}{2}(\cos(B-C) - \cos(B+C)) \Rightarrow$$

$$-\cos A$$

$$1 + \cos A = \cos(A - 45^\circ) + \cos A \Rightarrow \cos(A - 45^\circ) = 1 \Rightarrow A - 45^\circ = 0$$

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$$\hat{A} = 45^\circ \leftarrow \hat{C} = 75^\circ$$