نام و نام خانوادگی ...یوسف عربیان..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

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$x_B = 0 \Rightarrow \tan\left(-2(x_B)+\frac{\pi}{4}\right) = 1 \Rightarrow B\Big|_{1}^{0}$

$\tan\left(-2(x_A)+\frac{\pi}{4}\right) = -\infty \Rightarrow x_A = \frac{3\pi}{8} \Rightarrow A\Big|_{0}^{\frac{3\pi}{8}}$

$\tan\left(-2(x_C)+\frac{\pi}{4}\right) = +\infty \Rightarrow x_C = -\frac{\pi}{8} \Rightarrow C\Big|_{0}^{-\frac{\pi}{8}}$

$\Rightarrow S = 1 \times \left(\frac{3\pi}{8}+\frac{\pi}{8}\right) \times \frac{1}{2} = \frac{\pi}{4}$

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$x = \frac{2}{3} \Rightarrow \frac{4}{9} - \frac{2}{3}\sin\alpha - \frac{1}{4}(1-\sin^2\alpha) = 0 \Rightarrow \sin\alpha = \begin{cases} \frac{1}{3} \\ \frac{1}{3} \end{cases}$ غ ق ق

$\Rightarrow \tan^2\alpha = \frac{1}{8} \Rightarrow 1+\tan^2\alpha = \frac{9}{8}$

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$\log \sin\alpha - \log^{-\cos\alpha} = \log^{-\tan\alpha} = \log^{2}$

$\Rightarrow \tan\alpha = -2 \quad \sin\alpha > 0 \quad -\cos\alpha > 0 \Rightarrow \sin\alpha = \frac{1}{\sqrt{10}}$

$\cos\alpha = -\frac{3}{\sqrt{10}}$

$\sin\alpha - \cos\alpha = \frac{1}{\sqrt{10}} + \frac{3}{\sqrt{10}} = \frac{4}{\sqrt{10}}$

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

$\cos^4\alpha + \sin^2\alpha = (1-\sin^2\alpha)(1-\sin^2\alpha) - \sin^2\alpha$

$= \sin^4\alpha - \sin^2\alpha + 1$

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

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

صفر مشترک

$\sin x \tan x - \frac{1}{\cos x} > 0 \Rightarrow \frac{\sin^2 x - 1}{\cos x} > 0 \Rightarrow \frac{-\cos^2 x}{\cos x} > 0 \Rightarrow -\cos x > 0$

$\Rightarrow \cos x < 0$

$\Rightarrow$ ربع سوم

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

$\Rightarrow \cot n = -\frac{3}{2}$

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

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$\frac{\sqrt{1+\cos 40}}{\sin(20+30)+\sin(30-20)} = \frac{\sqrt{2\cos^2 20}}{2\sin 30 \cos 20} = \sqrt{2}$

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$\frac{1-\tan^2 20}{1+\tan^2 20} = \cos 40$ $\quad 2\cos^2 10 - 1 = \cos 20$ $\quad 1 - 2\sin^2 \alpha = \cos 10$

$\cos 10 \times \cos 20 \times \cos 40 = \frac{\sin 10}{\sin 10} \times \cos 10 \times \cos 20 \times \cos 40 = \frac{1}{8} \frac{\sin 80}{\sin 10}$

$= \frac{1}{8} \frac{\cos 10}{\sin 10} = \frac{1}{8} \cot 10$

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$\sin\alpha + 3\cos\alpha = 2$

$\sqrt{1-\cos^2\alpha} + 3\cos\alpha = 2$

$\sqrt{1-\cos^2\alpha} = 2 - 3\cos\alpha$

$1 - \cos^2\alpha = 9\cos^2\alpha - 12\cos\alpha + 4$

$10\cos^2\alpha - 12\cos\alpha + 3 = 0$

$5\cos 2\alpha - 12\cos\alpha$

$= 5(2\cos^2\alpha - 1) - 12\cos\alpha$

$= 10\cos^2\alpha - 12\cos\alpha - 5$

$= \underbrace{10\cos^2\alpha - 12\cos\alpha + 3}_{0} - 8$

$= -8$

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$\sin B \times \sin C = \frac{1+\cos A}{2}$

$2\sin B \times \sin C = 1 - \cos(B+C)$

$2\sin B \times \sin C = 1 - \cos B \times \cos C + \sin B \times \sin C$

$\sin B \times \sin C + \cos B \times \cos C = 1 \Rightarrow \cos(B-C) = 1$

$\Rightarrow B = C = 72 \Rightarrow A = 36^\circ$

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