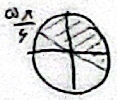
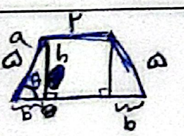
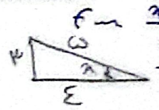
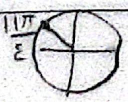
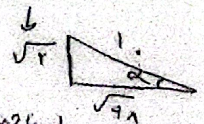
نام و نام خانوادگی ......اسماعیلی کاربی......... پاسخنامه تشریحی تکلیف شماره ...۲۸... کلاس ...یازدهم تجربی B.........

انتهای کمان α کدام ناحیه؟ $\frac{1-\sin\alpha}{\lvert\cos\alpha\rvert} = \frac{1}{\sqrt{\cos^2\alpha}} - \frac{1}{\cot\alpha} = \frac{1}{\lvert\cos\alpha\rvert} - \frac{1}{\cot\alpha} \overset{(1)}{=} \frac{1}{\lvert\cos\alpha\rvert} - \frac{\lvert\sin\alpha\rvert}{\cos\alpha} = \frac{1-\sin\alpha}{\lvert\cos\alpha\rvert}$ $\cot\alpha = \frac{\cos\alpha}{\sqrt{1-\cos^2\alpha}} = \frac{\cos}{\sqrt{\sin^2 x}} = \frac{\cos}{\lvert\sin\rvert}$ (1) $\cos\alpha > 0 \Leftarrow \cos\alpha = \lvert\cos\alpha\rvert$ $\sin\alpha > 0 \leftarrow 1-\sin\alpha = 1 - \lvert\sin\alpha\rvert$ → ناحیه اول	۱
$m?$ $-\frac{\pi}{12} < x < \frac{5\pi}{12}$ $\quad \sin 2x = \frac{m-1}{4}$ $-\frac{\pi}{6} < 2x < \frac{5\pi}{6} \rightarrow$  $\quad -\frac{1}{2} < \sin 2x \leq 1 \Rightarrow -\frac{1}{2} < \frac{m-1}{4} \leq 1$ $-2 < m-1 \leq 4$ $-1 < m \leq 5$	۲
$\tan x + \cot x = -3 = \frac{2}{\sin 2x}$ $\quad 3\pi < 4x < 4\pi \rightarrow \frac{3\pi}{4} < x < \pi$ $\sin 2x = -\frac{2}{3} \Longrightarrow 1 + \sin(2x) = \frac{1}{3} = \cos^2 x + \sin^2 x + 2\sin x\cos x = \frac{1}{3} = (\sin x + \cos x)^2 = \frac{1}{3}$ $\cos x + \sin x = \pm\frac{\sqrt{3}}{3}$ (+ غ ق ق) (1) $\frac{1}{\sin^3 x + \cos^3 x} = \frac{1}{(\sin x + \cos x)(\underbrace{\cos^2 x + \sin^2 x}_{1} - \sin x\cos x)}$ (1) $\frac{1}{(-\frac{\sqrt{3}}{3})(\frac{4}{3})} = -\frac{9}{4\sqrt{3}}$ $1 - \frac{1}{2}\sin 2x = \frac{4}{3}$ $= -\frac{3\sqrt{3}}{4}$	۳
 $\cos\theta = 0.6 \rightarrow \cos^2\theta + \sin^2\theta = 1 \rightarrow \sin^2\theta = 0.64 \rightarrow \sin\theta = \pm 0.8$ حاده θ $\rightarrow \sin\theta = 0.8$ $\sin\theta = \frac{h}{a} = \frac{h}{5} = 0.8 \rightarrow h = 4$ $\cos\alpha = \frac{b}{a} = \frac{b}{5} = 0.6 \rightarrow b = 3 \longrightarrow$ قاعده بزرگتر $= 2b +$ قاعده کوچک $= 8$ $S_{\text{ذوزنقه}} = \frac{1}{2}$ (قاعده کوچک + قاعده بزرگ) (ارتفاع) $= \frac{1}{2}(8+2)(4) = 20$	۴
$\tan(285)\tan(-165) - \sin(195)\cos(255)$ $= \tan(\frac{3\pi}{2} + 15^\circ)(-\tan(\pi - 15^\circ)) - \sin(\pi + 15^\circ)\cos(\frac{3\pi}{2} - 15^\circ) = (-\cot 15^\circ)(\tan 15^\circ) - ((-\sin 15^\circ)(-\sin 15^\circ))$ $= -1 + \sin^2 15 = -(1 - \sin^2 15) = -\cos^2 15 \rightarrow K = -1$	۵

$A = \sqrt{3}\cos(210^\circ)\sin(243^\circ) - \sqrt{2}\sin(135^\circ)\cos(153^\circ) = -\frac{3}{2}\sin(\frac{3\pi}{2}-27^\circ) - \cos(\pi - 27^\circ)$ ($\cos(210^\circ) = -\frac{\sqrt{3}}{2}$ ، $\sin(135^\circ) = \frac{\sqrt{2}}{2}$) $-\frac{3}{2}(-\cos 27^\circ) - (-\cos 27^\circ) = \frac{3}{2}\cos 27^\circ + \cos 27^\circ = \frac{5}{2}\cos 27^\circ$ برابر $\frac{5}{2}$	۶
$f(x) = 16\cos^2(3x)\cos^2(6x)\cos^2(12x)\cos^2(24x)$ $f(x)\times\sin^2(3x) = 16\times\sin^2(3x)\times\cos^2(3x)\times\cos^2(6x)\times\cos^2(12x)\times\cos^2(24x)$ $\frac{1}{4}\sin^2(6x)$ ، $\frac{1}{4}\sin^2(12x)$ ، $\frac{1}{4}\sin^2(24x)$ ، $\frac{1}{4}\sin^2(48x)$ $f(x) = \frac{\sin^2(48x)}{16\times\sin^2(3x)} \xrightarrow{x=\frac{\pi}{36}} \frac{\sin^2(\pi+\frac{4}{12}\pi)}{16\sin^2(\frac{1}{12}\pi)} = \frac{\sin^2(\frac{\pi}{3}\pi)}{16\times\sin^2(\frac{\pi}{12})} = \frac{\frac{3}{4}}{16\times\frac{(1-\cos\frac{\pi}{6})}{2}} = \frac{3}{16(2-\sqrt{3})}$	۷
$\frac{1-\sin x}{1+\sin x} = 4 \to 1-\sin x = 4+4\sin x \to \sin x = -\frac{3}{5}$ ، ربع سوم / $\tan\frac{x}{2}$  $\to \tan x = \frac{3}{4}$ $\tan x = \frac{2\tan\frac{x}{2}}{1-\tan^2(\frac{x}{2})} = \frac{3}{4} = \frac{2\tan\frac{x}{2}}{1-\tan^2(\frac{x}{2})} \Rightarrow 3 - 3\tan^2(\frac{x}{2}) = 8\tan(\frac{x}{2})$ $3\tan^2(\frac{x}{2}) + 8\tan(\frac{x}{2}) - 3 = 0 \to$ یا $\tan^2(\frac{x}{2}) + 8\tan(\frac{x}{2}) - 9 = 0$ $\to \tan(\frac{x}{2})$: $\frac{1}{3}$ ، -3 ← مقدار صحیح	۸
$\frac{\sin\theta}{1-\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = \frac{2\sin(\frac{\theta}{2})\cos(\frac{\theta}{2})}{2\sin^2(\frac{\theta}{2})} + \frac{2\cos^2(\frac{\theta}{2})}{2\sin(\frac{\theta}{2})\cos(\frac{\theta}{2})} = 2\cot(\frac{\theta}{2})$ $K = 2$	۹
 ? $\cos(\frac{11\pi}{4}+\alpha)$ ، $\sin\alpha = \frac{\sqrt{2}}{10}$ ، ربع دوم α  ربع دوم ↓ $\cos\alpha = -\frac{\sqrt{98}}{10}$ $\cos(\frac{11\pi}{4}+\alpha) = \cos\frac{11\pi}{4}\times\cos\alpha - \sin\frac{11\pi}{4}\times\sin\alpha$ $= (-\frac{\sqrt{2}}{2})\times(-\frac{\sqrt{98}}{10}) - \frac{\sqrt{2}}{2}\times\frac{\sqrt{2}}{10} = \frac{7}{10} - \frac{1}{10} = 0.6$	۱۰