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MATH 2312
Pre-Calculus II
Mr. Aguirre

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Evaluate

$$2\sin\frac{\pi}{3} - 3\tan\frac{\pi}{6}$$

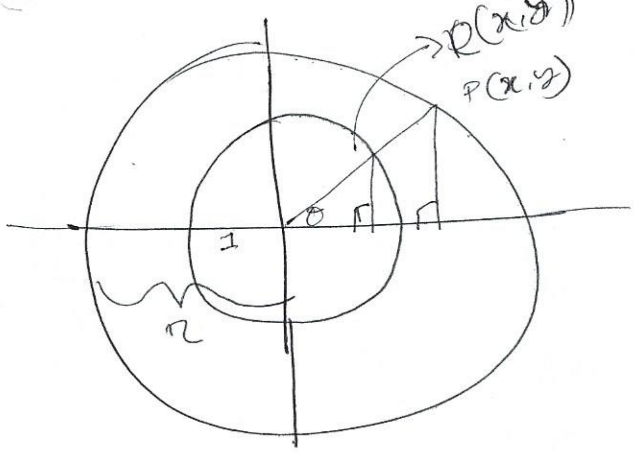
$$2\left(\frac{\sqrt{3}}{2}\right) - 3\left(\frac{1}{\sqrt{3}}\right)$$

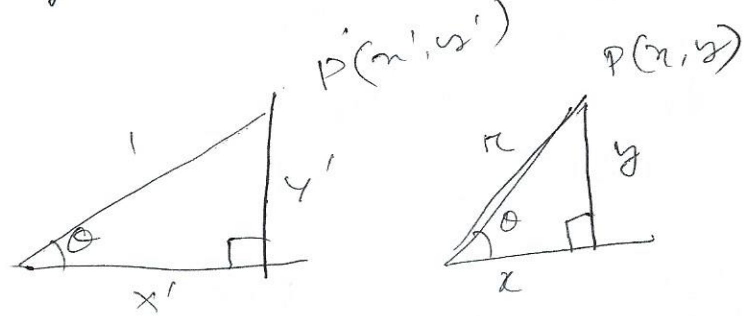
$$= \sqrt{3} - \frac{3}{\sqrt{3}}$$

$$= \sqrt{3} - \sqrt{3}$$

$$= 0$$

Using a circle of radius to evaluate trig $f(x)$
By similar triangles.



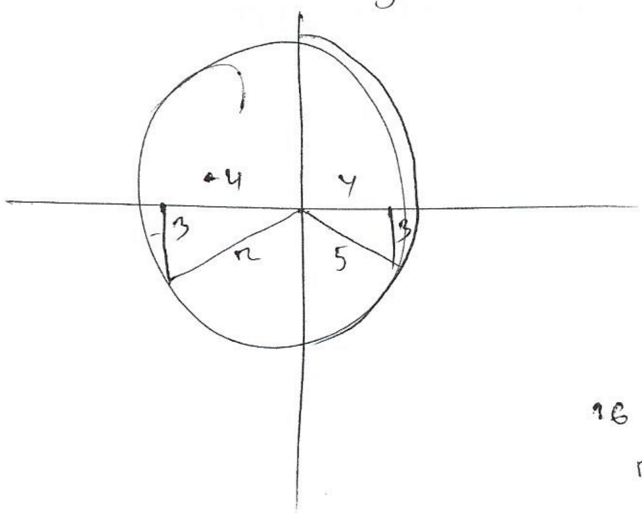


$\cos\theta = x' = \frac{x}{r}$ $\qquad$ $\sin\theta = \frac{y}{r}$

$\sec\theta = \frac{1}{x'} = \frac{r}{x}$ $\qquad$ $\text{cosecant}\,\theta = \frac{1}{y'} = \frac{r}{y}$

$\tan\theta = y/x$ $\qquad$ $\cot\theta = \frac{x}{y}$

find exact values of trig f(x) if (4, -3) is an terminal of θ in standard position



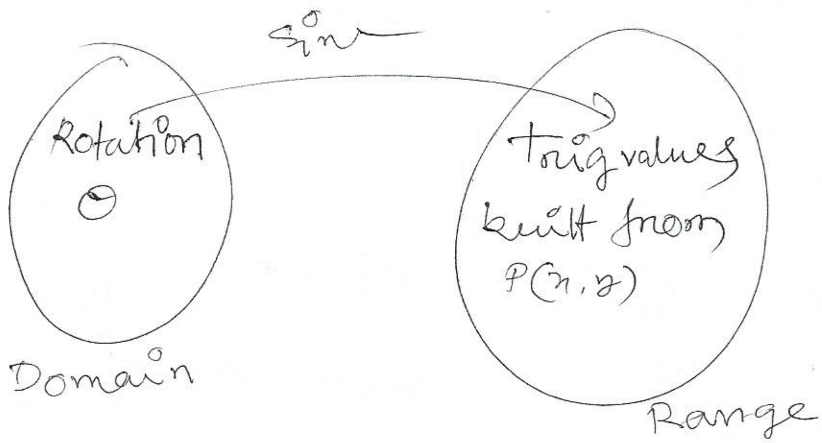
$16 + 9 = r^2$

$r = 5$

$\sin\theta = \frac{y}{r} = -3/5$ $\qquad$ cosecant $\theta = -5/3$

$\cos\theta = \frac{x}{r} = \frac{4}{5}$ $\qquad$ $\sec\theta = 5/4$

$\tan\theta = -3/4$ $\qquad$ $\cot\theta = -4/3$



$g(x) = \sin(x)$

$\downarrow$ $\qquad$ $\downarrow$

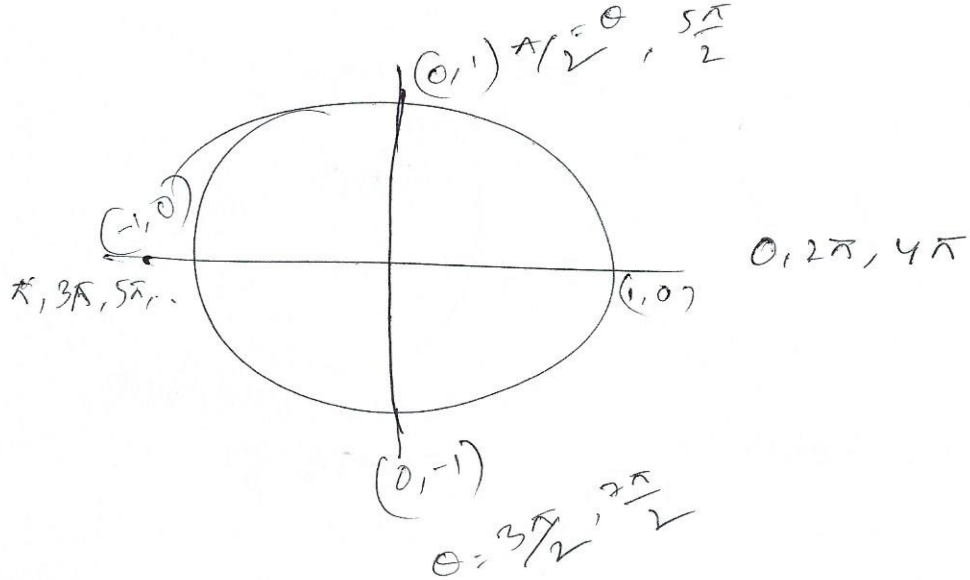
Range $\qquad$ domain

$f(x) = \log(x)$

Cant divide by 0
" negative under root

$\sin\theta = y$ $\mathbb{R}\ (-\infty, \infty)$

$\cos\theta = x$ $\mathbb{R}\ (-\infty, \infty)$



$\tan\theta = \frac{y}{x}$ — $\mathbb{R}$ except odd integers multiples of $\frac{\pi}{2}$

$\sec\theta = \frac{1}{x}$ — $\mathbb{R}$, except $x \neq \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2} \ldots$

$\mathbb{R}$, $\frac{k\pi}{2}$, $k \to$ odd.

$\mathbb{R}$, $x \neq (2k+1)\frac{\pi}{2}$, where $k \in \mathbb{Z}$ the set of integers.

$\cot\theta = \frac{\cancel{x}}{y}$,

$\operatorname{cosecant}\theta = \frac{1}{y}$

$\mathbb{R}$, $\theta \neq 0, \pi, 2\pi \ldots$

$\mathbb{R}$, $\theta \neq$ integer multiple of π.

$\mathbb{R}$, $\theta \neq k\pi$, $k \in \mathbb{Z}$.