MATH 11022–006
TR 11:00

Trigonometry

Dr. Kracht
Spring 2014

Name: KEY Quiz Score: /20

Quiz 8

NO CALCULATORS.

1. (10 pts) Give the exact value of each of the following or state "undefined."

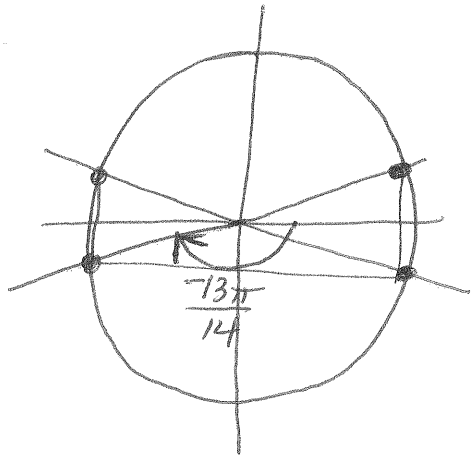
(a) $\sin^{-1}\left(-\frac{1}{\sqrt{2}}\right) =$ $-\frac{\pi}{4}$

(b) $\cos^{-1}(0) =$ $\frac{\pi}{2}$

(c) $\sin^{-1}\left(\sin\left(-\frac{13\pi}{14}\right)\right) =$ $-\frac{\pi}{14}$

(d) $\cos^{-1}\left(\cos\left(-\frac{13\pi}{14}\right)\right) =$ $\frac{13\pi}{14}$

(e) $\tan^{-1}\left(\tan\left(-\frac{13\pi}{14}\right)\right) =$ $\frac{\pi}{14}$



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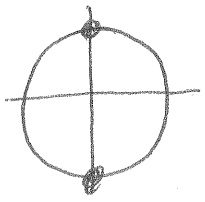
2. (10 pts) Find all real solutions. $\sqrt{2}\sin x\cos x + \cos x = 0$

$\cos x(\sqrt{2}\sin x + 1) = 0$

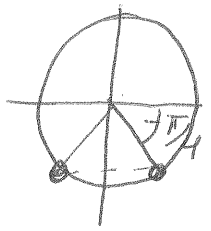
$\cos x = 0$ or $\sqrt{2}\sin x + 1 = 0$



$x = \frac{\pi}{2} + n\pi$

$\sqrt{2}\sin x = -1$

$\sin x = -\frac{1}{\sqrt{2}}$



or

$x = -\frac{\pi}{4} + 2n\pi$ or $x = \frac{5\pi}{4} + 2n\pi$

(where $n \in \mathbb{Z}$)