MATH 1080 TRIGONOMETRY Name KEY

7.4 Worksheet Date

1. If $\sec t = 2$, determine the value of $\sec(-t)$. $= 2$

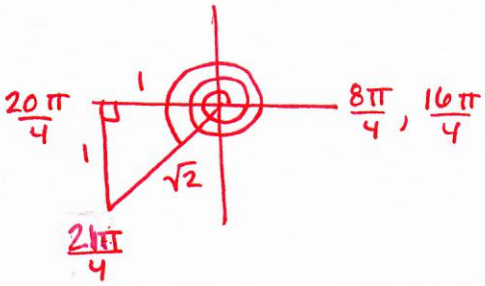
2. If $\sin t = -\frac{\sqrt{3}}{2}$, determine the value of $\sin(-t)$. $\frac{\sqrt{3}}{2}$

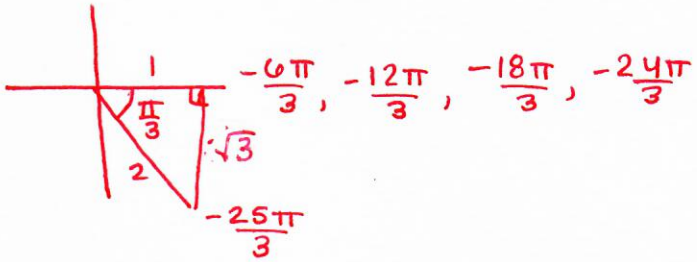
3. If $\tan t = -0.72$, determine the value of $\tan(-t)$. 0.72

Using a unit circle, determine the exact value of each.

4. $\sin \frac{21\pi}{4} = -\frac{\sqrt{2}}{2}$

5. $\cos\left(-\frac{25\pi}{3}\right) = \frac{1}{2}$





6. Using trig identities, determine the value of $\tan\left(\frac{19\pi}{6}\right)$ *given that* $\cos\left(\frac{19\pi}{6}\right) = -\frac{\sqrt{3}}{2}$ and $\sin\left(\frac{19\pi}{6}\right) = -\frac{1}{2}$.

$$\tan\left(\frac{19\pi}{6}\right) = \frac{\sin\left(\frac{19\pi}{6}\right)}{\cos\left(\frac{19\pi}{6}\right)} = \frac{-\frac{1}{2}}{-\frac{\sqrt{3}}{2}}$$

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

$$= \frac{1}{\sqrt{3}}$$

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

Use trig identities to simplify each expression.

7. $\csc x \tan x$

$$= \left(\frac{1}{\sin x}\right)\left(\frac{\sin x}{\cos x}\right)$$

$$= \frac{1}{\cos x}$$

$$= \sec x$$

8. $\cot^2 x \sec^2 x$

$$= \left(\frac{\cos^2 x}{\sin^2 x}\right)\left(\frac{1}{\cos^2 x}\right)$$

$$= \frac{1}{\sin^2 x}$$

$$= \csc^2 x$$