Name: Key

5.1 Trig Identities Practice

For 1-6, simplify.

1) $\cos^3 x + \cos x + \cos x \sin^2 x$

$\cos x(\cos^2 x + \sin^2 x) + \cos x$

$\cos x(1) + \cos x$

$2\cos x$

2) $\sec x \cos x$

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

1

3) $\sec x \cot x$

$\frac{1}{\cos x} \cdot \frac{\cos x}{\sin x}$

$\frac{1}{\sin x}$

$\csc x$

4) $\csc\theta \cot^2\theta + \frac{1}{\sin\theta}$

$\csc\theta \cot^2\theta + \csc\theta$

$\csc\theta(\cot^2\theta + 1)$

$\csc\theta(\csc^2\theta)$

$\csc^3\theta$

5) $\sin x + \cos x \cot x$

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

$(\sin x)\frac{\sin x}{1} + \frac{\cos^2 x}{\sin x}$ $(\sin x)$

get common denominator!

$\frac{\sin^2 x + \cos^2 x}{\sin x}$

$\frac{1}{\sin x}$

$\csc x$

$\frac{\sin^2 x}{\sin x} + \frac{\cos^2 x}{\sin x}$

6) $\frac{\tan\theta \csc\theta}{\sec\theta}$

$\frac{\frac{\sin\theta}{\cos\theta} \cdot \frac{1}{\sin\theta}}{\frac{1}{\cos\theta}}$

$\frac{1}{\frac{1}{\cos\theta}}$

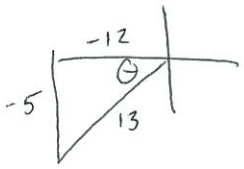
1

$\cos\theta$

Review!

7) Given that $\tan\theta = \frac{5}{12}$ and $180° < \theta < 270°$, find the values of the other five trigonometric function of θ.

Q3!



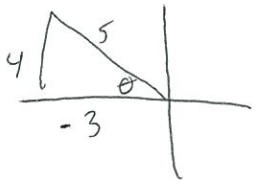
$\cos\theta = \frac{-12}{13}$ $\sec\theta = \frac{-13}{12}$

$\sin\theta = \frac{-5}{13}$ $\csc\theta = \frac{-13}{5}$

$\cot\theta = \frac{12}{5}$

8) Given that $\sin\theta = \frac{4}{5}$ and $\frac{\pi}{2} < \theta < \pi$, find the values of the other five trigonometric function of θ.

Q2!



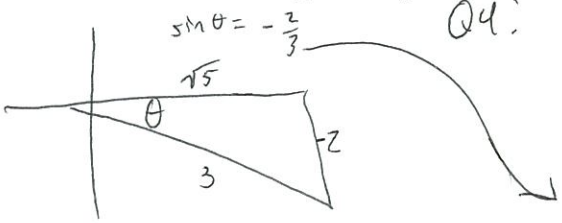
$\cos\theta = \frac{-3}{5}$ $\sec\theta = \frac{-5}{3}$

$\tan\theta = \frac{-4}{3}$ $\cot\theta = \frac{-3}{4}$

$\csc\theta = \frac{5}{4}$

9) Given that $\csc\theta = -\frac{3}{2}$ and $\frac{3\pi}{2} < \theta < 2\pi$, find the values of the other five trigonometric function of θ.

Q4:



$\cos\theta = \frac{\sqrt{5}}{3}$ $\sec\theta = \frac{3\sqrt{5}}{5}$

$\tan\theta = \frac{-2\sqrt{5}}{5}$ $\cot\theta = -\frac{\sqrt{5}}{2}$

$\sin\theta = \frac{-2}{3}$