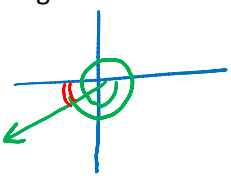
13.3-13.4 Practice Quiz #2

Name: Key

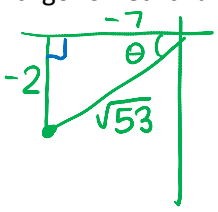
1) Sketch the angle $-\frac{17\pi}{6}$. Then find its reference angle.

$-\frac{17\pi}{6}+\frac{12\pi}{6}=-\frac{5\pi}{6}$



$\frac{6\pi}{6}-\frac{5\pi}{6}=\boxed{\frac{\pi}{6}}$

2) Use the point $(-7,-2)$ on the terminal side of an angle θ in standard position to evaluate the six trigonometric functions of θ.



$\sin\theta=\frac{-2\sqrt{53}}{53}$ $\csc\theta=\frac{\sqrt{53}}{-2}$

$\cos\theta=\frac{-7\sqrt{53}}{53}$ $\sec\theta=\frac{\sqrt{53}}{-7}$

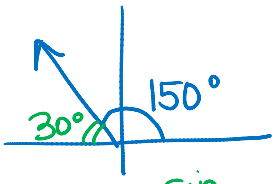
$\tan\theta=\frac{2}{7}$ $\cot\theta=\frac{7}{2}$

3) Evaluate the function $\tan 150°$ without using a calculator.

$30°=\left(\frac{\sqrt{3}}{2},\frac{1}{2}\right)$

2nd Quad $\Rightarrow -x,+y$

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



$\tan=\frac{\sin}{\cos}=\frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}}=\frac{1}{2}\cdot-\frac{2}{\sqrt{3}}=-\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{-\sqrt{3}}{3}$

no radicals in denom.!

4) Evaluate the expression $\tan^{-1}\left(\frac{\sqrt{3}}{3}\right)$ without using a calculator. Give your answer in radians and degrees.

$30°=\left(\frac{\sqrt{3}}{2},\frac{1}{2}\right)$

$\tan 30°=\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}}=\frac{1}{2}\cdot\frac{2}{\sqrt{3}}=\frac{1}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{\sqrt{3}}{3}$

$30°$ or $\frac{\pi}{6}$

5) Solve the equation for θ: $\tan\theta=1.6;180°<\theta<270°$

$\theta=\tan^{-1}(1.6)=57.99°$

$180+57.99=237.99°$

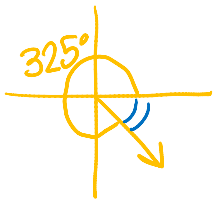
check! $\tan 237.99 \stackrel{?}{=} 1.6$ ✓

13.3-13.4 Practice Quiz #3

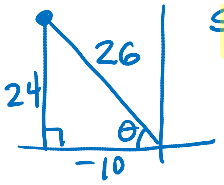
Name:

1. Sketch the angle $325°$. Then find its reference angle.

$360-325=35°$



2. Use the point $(-10,24)$ on the terminal side of an angle θ in standard position to evaluate the six trigonometric functions of θ.



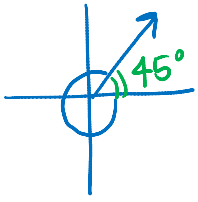
$\sin\theta=\frac{12}{13}$ $\csc\theta=\frac{13}{12}$

$\cos\theta=-\frac{5}{13}$ $\sec=-\frac{13}{5}$

$\tan=\frac{-12}{5}$ $\cot=-\frac{5}{12}$

3. Evaluate the function $\sec(-315°)$ without using a calculator.

$45°=\left(\sqrt{2}/2,\sqrt{2}/2\right)$



$\sec=\frac{1}{\cos}=\frac{1}{\frac{\sqrt{2}}{2}}=1\cdot\frac{2}{\sqrt{2}}=\frac{2}{\sqrt{2}}$

$\frac{2}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}=\frac{2\sqrt{2}}{2}=\sqrt{2}$

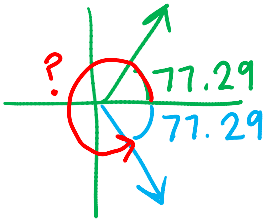
4. Evaluate the expression $\sin^{-1}0$ without using a calculator. Give your answer in radians and degrees.

what angle has a y-value of 0?

$0°$ or 0 radians

5. Solve the equation for θ: $\cos\theta=0.22;270°<\theta<360°$

$\theta=\cos^{-1}(0.22)=77.29°$ 4th Quad



$360-77.29=282.71°$

check! $\cos 282.71=.22$ ✓