Name: _____ M$6 Homework 11

1. a) Convert $\frac{5\pi}{3}$ to degree measure.

   b) Find $\cos\left(\frac{5\pi}{3}\right)$.

1. _____

2. If $\sin\theta$ is negative and $\cos\theta$ is negative, in which quadrant does the terminal side of θ lie?
   (1) I (3) III
   (2) II (4) IV

2. _____

3. If $\sin\theta > 0$ and $\sec\theta < 0$, in which quadrant does the terminal side of angle θ lie?
   (1) I (3) III
   (2) II (4) IV

3. _____

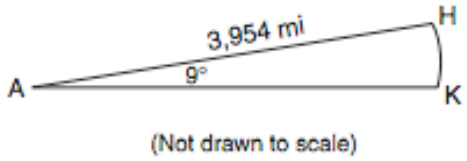
4. Find the exact value of $\tan 225°$.

4. _____

5. Find the exact value of $\sin 330°$.

5. _____

6. Cities *H* and *K* are located on the same line of longitude and the difference in the latitude of these cities is 9º, as shown in the accompanying diagram. If Earth's radius is 3,954 miles, how many miles north of city *K* is city *H* along arc *HK*? Round your answer to the *nearest tenth of a mile*.



(Not drawn to scale)

6. _____

7. In which quadrant(s) does the graph of $y = \frac{-8}{x}$ lie?

7. _____

8. The expression $\log\frac{\sqrt{xy}}{w}$ is equivalent to
   (1) $\frac{2\log xy}{\log w}$
   (2) $\log x + \log y - \log w$
   (3) $\frac{1}{2}(\log x + \log y) - \log w$
   (4) $\frac{1}{2}(\log xy - \log w)$

8. _____