Math 32 Quiz 5
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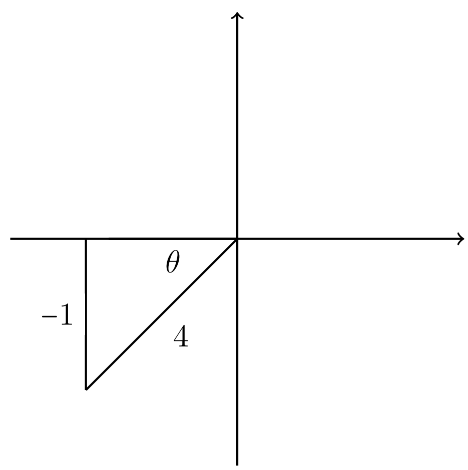
Name: ______________________________

1. Suppose $\frac{\pi}{2} < \theta < \frac{3\pi}{2}$ and $\sin\theta = -1/4$. Evaluate the following:

   (a) $\cos\theta$

   (b) $\tan\theta$

   Since $\sin\theta < 0$, we know θ is in the 3rd quadrant.



The other side length is $\sqrt{4^2 - (-1)^2} = \sqrt{15}$. Thus, $\boxed{\cos\theta = -\frac{\sqrt{15}}{4}}$ and $\boxed{\tan\theta = \frac{-1}{-\sqrt{15}} = \frac{\sqrt{15}}{15}}$.

2. Find the four smallest positive numbers θ such that $\tan\theta = -1$.

   $\tan\theta = -1$ first in the second quadrant, at $\theta = \frac{3\pi}{4}$. It is then negative again in the fourth quadrant at $\theta = \frac{3\pi}{4} + \pi = \frac{7\pi}{4}$. The next two times it is negative is $\frac{7\pi}{4} + \pi = \frac{11\pi}{4}$ and $\frac{11\pi}{4} + \pi = \frac{15\pi}{4}$.