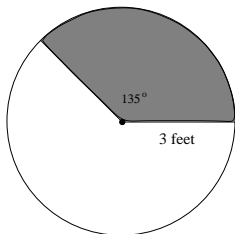


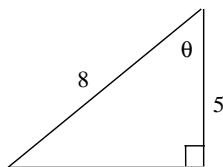
This is a Take-Home Quiz. You may use your book and course notes, and you may work with other members of the class, but you may not consult with outside tutors (at least not on these specific problems).

1. (4 points) Find the length of the arc and the area of the sector of the circle shown below:

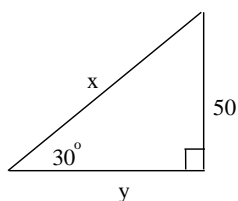


2. (4 points)

- (a) Find $\sin \theta$, $\cos \theta$, and $\tan \theta$ based on the triangle below:



- (b) Find the values of x and y *exactly* based on the triangle below:



(c) (4 points) Fill in *exact* values in each blank in the table below:

θ (degrees)	θ (radians)	$\sin \theta$	$\cos \theta$	$\tan \theta$
0°				
30°				
45°				
60°				
90°				
120°				
135°				
150°				
180°				

(d) (4 points) Verify the identity $\cot \theta + \tan \theta = \sec \theta \csc \theta$ by transforming the left hand side into the right hand side.

3. (4 points)

(a) In the space below, carefully draw the graph of $f(x) = \sin x$ for $-2\pi \leq x \leq 2\pi$

(b) In the space below, carefully draw the graph of $f(x) = \sec x$ for $-2\pi \leq x \leq 2\pi$