Quiz 2b, Math 4234. Name____________________

Combine with your take home portion work and turn in.

1. For each the following functions give the coefficients $a_0$, $a_1$, $a_2$ of the Taylor series about the indicated point $z_0$. Indicate the radius of convergence and justify your reasoning.

   a) $f(z) = \sin(z)$, $z_0 = \frac{\pi}{4}$;  
   b) $g(z) = \sec(z)$, $z_0 = 0$.

2. Compute the following complex integrals:

   a) $\int_C e^z \, dz$, $C : z = 1 + t(2 + \pi i)$, $0 \leq t \leq 1$;  
   b) $\int_C \frac{dz}{z}$, 

where, in b), $C$ is the boundary of the square of side length 2 centered at 0, oriented in the positive direction.