Reading Quiz #19

姓名：_____ 系級：_____學號：_____ 分數：_____

Read Section 8.8(pages 566-573) and work out the following problems.

1. Determine whether the integral is convergent or divergent. Evaluate its value if it is convergent.

   (a) $\displaystyle\int_0^1 \frac{dx}{\sqrt{1-x^2}}$

   (b) $\displaystyle\int_0^\infty \frac{x \arctan x}{(1+x^2)^2}\, dx$

2. Use the Comparison Theorem to determine whether the integral is convergent or divergent.

   (a) $\displaystyle\int_0^1 \frac{e^{-x}}{\sqrt{x}}\, dx$

   (b) $\displaystyle\int_1^\infty \frac{dx}{x+e^{2x}}$