

**Practice Quiz 11 (L33-L34)**

Show all work for full credit.

1. Compute  $\int_1^{e^\pi} \sin(\ln(x)) \, dx$ . (Hint: do a  $u$ -substitution first)

2. Which function goes to zero faster,  $f(x) = e^{-x}$  or  $g(x) = \frac{1}{x}$ . (Hint: consider the asymptotic growth of the reciprocal of these functions)