

Suppose you calculate a sample mean of  $\bar{x} = 1.42$  with sample standard deviation  $S = 35.52$ . There are  $n = 274$  observations.

**Problem 1.** Find the 95% confidence interval.

**Problem 2.** Find the 90% confidence interval.

**Problem 3.** Test  $\mu = 0$  with 95% confidence.

**Problem 4.** Find the  $p$ -value of this test.