

MA 113 B2

QUIZ 3

July 16, 2009.

Student Name (Last, First) _____

BU ID # _____

Show all your work for full credit.

1. (1 point) Take random samples, each of size 100, out of a finite but very large population of which nothing is known for certain. Is there a reason to hope that the distribution of sample means is approximately normal? Why or why not?

2. (4 points) A random sample of 100 United States residents is taken in order to approximate the average income in USA. Given that the sample mean is $\bar{X} = \$43000$ and the sample standard deviation is $s = \$9000$, what is the probability that the true population mean μ is between \$41000 and \$44000? (The sample size is large, so it is OK to use Z distribution rather than t .)