Math 1600, Section 12, Fall 2016 – Statistics
Lab 9 – November 3, 2016

Names: Group:

1. The amount of sulfur in daily emissions from a power plant has a normal distribution with a mean of 94 pounds and a standard deviation of 22 pounds. A random sample of five days is taken:

a. What can you say about the probability distribution of the sample mean $\overline{X}$?

b. Find the probability that the total amount of sulfur emissions will exceed 500 pounds.

2. A random sample of size 100 is taken from a population having a mean of 23 and a standard deviation of 4. The shape of the population distribution is unknown.

a. What can you say about the probability distribution of the sample mean $\overline{X}$?

b. Find the probability that $\overline{X}$ will exceed 23.6.

3. The weight of an almond is normally distributed with mean .05 ounce and standard deviation .015 ounces. Find the probability that a package of 100 almonds will weigh between 4.8 and 5.3 ounces.

4. For the standard normal variable Z, find:
a. $P[-1.62 < Z < -.54]$

b. $P[|Z| < 1.64]$

c. $P[|Z| > 1.96]$