

1) Results may vary. For example,
2, 4, 3, 2, 6 \rightarrow $\bar{x} = 3.4$, etc.

a) Results may vary

b) Probably approximately normal, with highest bars 2.5-3.5 and 3.5-4.5

c-f) Results may vary

2a) normalcdf gives 30.50%

b) 3.59%

c) The population is normally distributed, thus the sample means will be normally distributed.

d) 61.7%

e) $0.00005 = 0.005\%$ (Approx zero, if using a table)

f) The interval here, 5.10 to 5.14, contains the population mean = 5.11, and is close to this number. Sample means are more likely to be close to the mean than individual observations. Thus the number is higher for (d) than (a).

g) The interval here, 5.20 and up, is far from the mean. It is rare enough for one ball to be this weight, but rarer still to have several balls this weight so as to make the sample mean this high. Thus the number in (e) is much smaller than (b).

3a) The sample size is greater than 30, so the sample means are normally distributed.

b) $\mu_{\bar{x}} = 12750$, $\sigma_{\bar{x}} = 760.26$

c) 16.19%

d) 1.07%