WS 6/5.4

Name_____

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

**Provide an appropriate response.**

1) Assume that the heights of women are normally distributed with a mean of 63.6 inches and a standard deviation of 2.5 inches. If 100 women are randomly selected, 1) _____

find the mean of the sampling distribution

find the standard deviation of sampling distribution of sample mean

can we use central limit theorem? Why

find the probability that they have a mean height greater than 63.0 inches.

2) The body temperatures of adults are normally distributed with a mean of 98.6° F and a standard deviation of 0.60° F. If 25 adults are randomly selected, find the probability that their mean body temperature is less than 99° F. 2) _____

3) The lengths of pregnancies are normally distributed with a mean of 268 days and a standard deviation of 15 days. If 64 women are randomly selected, find the probability that they have a mean pregnancy between 266 days and 268 days. 3) _____

4) A soda machine dispenses normally distributed amounts of soda with a mean of 20 ounces and a standard deviation of 0.2 ounce. Are you more likely to randomly select one bottle with more than 20.3 ounces or are you more likely to select a sample of eight bottles with a mean amount of more than 20.3 ounces? Explain. 4) _____

1) 0.9918
2) 0.9996
3) 0.3577
4) It is more likely to select one bottle with more than 20.3 ounces because a large percentage of the data is now closer to the mean.