

- f. $\bar{X} \sim \underline{\hspace{1cm}}(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$
- g. In words, $\Sigma X = \underline{\hspace{2cm}}$
- h. $\Sigma X \sim \underline{\hspace{1cm}}(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$
- i. Without doing any calculations, do you think that it's likely that the professor will need to read a total of more than 1,050 pages? Why?
- j. Calculate the probability that the professor will need to read a total of more than 1,050 pages.
- k. Why is it so unlikely that the average length of the papers will be less than 12 pages?
89. Salaries for teachers in a particular elementary school district are normally distributed with a mean of \$44,000 and a standard deviation of \$6,500. We randomly survey ten teachers from that district.
- Find the 90th percentile for an individual teacher's salary.
 - Find the 90th percentile for the average teacher's salary.
90. The average length of a maternity stay in a U.S. hospital is said to be 2.4 days with a standard deviation of 0.9 days. We randomly survey 80 women who recently bore children in a U.S. hospital.
- In words, $X = \underline{\hspace{2cm}}$
 - In words, $\bar{X} = \underline{\hspace{2cm}}$
 - $\bar{X} \sim \underline{\hspace{1cm}}(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$
 - In words, $\Sigma X = \underline{\hspace{2cm}}$
 - $\Sigma X \sim \underline{\hspace{1cm}}(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$
 - Is it likely that an individual stayed more than five days in the hospital? Why or why not?
 - Is it likely that the average stay for the 80 women was more than five days? Why or why not?
 - Which is more likely:
 - An individual stayed more than five days.
 - the average stay of 80 women was more than five days.
 - If we were to sum up the women's stays, is it likely that, collectively they spent more than a year in the hospital? Why or why not?

For each problem, wherever possible, provide graphs and use the calculator.

91. NeverReady batteries has engineered a newer, longer lasting AAA battery. The company claims this battery has an average life span of 17 hours with a standard deviation of 0.8 hours. Your statistics class questions this claim. As a class, you randomly select 30 batteries and find that the sample mean life span is 16.7 hours. If the process is working properly, what is the probability of getting a random sample of 30 batteries in which the sample mean lifetime is 16.7 hours or less? Is the company's claim reasonable?
92. Men have an average weight of 172 pounds with a standard deviation of 29 pounds.
- Find the probability that 20 randomly selected men will have a sum weight greater than 3600 lbs.
 - If 20 men have a sum weight greater than 3500 lbs, then their total weight exceeds the safety limits for water taxis. Based on (a), is this a safety concern? Explain.
93. M&M candies large candy bags have a claimed net weight of 396.9 g. The standard deviation for the weight of the individual candies is 0.017 g. The following table is from a stats experiment conducted by a statistics class.

Red	Orange	Yellow	Brown	Blue	Green
0.751	0.735	0.883	0.696	0.881	0.925
0.841	0.895	0.769	0.876	0.863	0.914
0.856	0.865	0.859	0.855	0.775	0.881
0.799	0.864	0.784	0.806	0.854	0.865

Table 7.7