1. The systolic blood pressure of 18-year-old women is normally distributed with a mean of 120 mmHg and a standard deviation of 12 mmHg.

a) What percentage of 18-year-old women have a systolic blood pressure that lies within 3 standard deviations of the mean.

b) What level of systolic blood pressure is exceeded by 90% of 18-year-old women?

2. The time (in minutes) it takes adult o memorize a sequence of random digits is an exponential random variable. The average (mean) time is 10 minutes. What is the probability that it takes an adult over seven minutes to memorize the digits?

3. Department of Education in 2008, the average Pell grant award for 2007-2008 was $2,600. Assume that the standard deviation in Pell grants awards was $500.If we randomly sample 36 Pell grant recipients, would you be surprised if the mean grant amount for the sample was $2,940? Pick the correct response that gives the best reason.

A. Yes, $2,940 would be surprising because this sample result is more than 3 standard deviations from the overall mean grant amount of $2,600.

B. Yes, $2,940 would be surprising because this sample result is $340 greater than the overall mean grant amount of $2,600.

C. No, $2,940 would not be surprising because this sample result is within 2 standard deviations of the overall mean grant amount of $2,600.

D. No, $2,940 would not be surprising because this sample result is only $340 greater than the overall mean grant amount of $2,600, and we expect there to be variability in sample means.

4. A continuous random variable Y with probability density function

1. Find the mean and the variance
2. Find P(Y>5)
3. Find F(1).