Chapter 6
Probability Distributions
for
Continuous Random Variables

1. At a large government office in Kansas City, it has been found the time all employees spend on the phone each day for business purposes has a normal distribution with a mean of 47 minutes and a standard deviation of 10 minutes. Assume these times are normally distributed. If an employee is selected at random, what is the probability that he or she spends
   a) From 27 to 47 minutes on the phone each day?
   b) More than 57 minutes on the phone each day?
   c) Debbie spends a lot of time on the phone. In fact, she spends more time on the phone than 90% of her colleagues. What is the minimum amount of time she spends on the phone?

2. Adult systolic blood pressure is normally distributed with $\mu = 120$ and $\sigma = 20$. What percentage of adults have blood pressures
   a) less than 100?
   b) More than 100?
   c) Between 100 and 133?
   d) I have been told that my systolic blood pressure puts me in the 25th percentile. What is my systolic blood pressure?

3. The weight of packages from a particular machine are normally distributed with a mean of 200g and a standard deviation of 2 g. Find the probability that a randomly selected package from this machine weighs
   a) Less than 197 g.
   b) More than 200.5 g
   c) Between 198.5 and 199.5 g