Question 1

You’ve just landed a prime internship with Public Health Seattle-King County. Your first task is to analyze the rates of low birthweight babies. Babies weighting less than 5.5 pounds are defined as “low birth-weight” and are susceptible to many health problems. Some factors which appear to increase the chances of low birth-weight are: maternal smoking, drug or alcohol consumption, lack of prenatal care, teen-age mother, or African-American mother.

a) Suppose that the weight distribution of babies in the US for 2000 was approximately normal with a mean of 8 pounds and a standard deviation of 1.6 pounds. About what proportion of babies were low birth-weight?

b) Some have suggested that all babies weighting less than the 25th percentile should be carefully monitored for health problems. What is highest weight that would be monitored under this proposal?

c) If a Seattle hospital has 300 births per year, how many would you expect to be low birth-weight? What might affect your prediction?

d) Write up some bullet points for your hospital supervisor. Be sure to provide your numerical conclusions, as well as your educated opinions on the quality of the data and analysis. Don’t forget--your supervisor is very smart, but has an aversion to statistical jargon.
Question 2

You are the manager of a help line for families who want to find out about the Earned Income Tax Credit. Suppose that the amount of time it takes to answer a person’s question has a normal distribution with a mean of 10 minutes and a standard deviation of 2 minutes.

a) What range of time (in minutes) do 90 percent of the calls fall within?

b) What range of time do 95 percent of the calls fall within?