Act. #49 "Normal Distribution"

For each question, construct a normal distribution curve and label the horizontal axis. Then answer each question.

19. The mean life of a tire is 30,000 km. The standard deviation is 2000 km.
   a) 68% of all tires will have a life between _____ km and _____ km.
   b) 95% of all tires will have a life between _____ Km and _____ Km.
   c) What percent of the tires will have a life that exceeds 34,000 Km?
   d) If a company purchased 5000 tires, how many tires would you expect to last more than 28,000 km?

20. The shelf life of a particular dairy product is normally distributed with a mean of 12 days and a standard deviation of 3 days.
   a) About what percent of the products last between 6 and 15 days?
   b) About what percent of the products last between 3 and 15 days?
   c) About what percent of the products last 3 days or less?
   d) About what percent of the products last 12 or more days?

21. A line up for tickets to a local concert had an average (mean) waiting time of 20 minutes with a standard deviation of 4 minutes.
   a) What percentage of the people in line waited for more than 22 minutes?
   b) If 4000 ticket buyers were in line, how many of them would expect to wait for less than 16 minutes?

22. The mean life of a battery is 50 hours with a standard deviation of 6 hours. The manufacturer advertises that they will replace all batteries that last less than 38 hours. If 40,000 batteries were produced, how many would they expect to replace?