

1. The acceptability of a capillary tube for a freezer application is found by measuring the pressure drop in pounds per square inch between the two ends of the tube. The pressures obtained from a manufacturing process of capillary tubes is found to be normally distributed with an average pressure of 130 pounds per square inch and a standard deviation of 4 pounds per square inch. Determine:
 - (a) What percent of the pressures are below 121 pounds per square inch?
 - (b) What percent of the pressure readings lie between 121 and 134 pounds per square inch ?

2. It is estimated that 3.5% of the general population will live past their 90th birthday. In a graduating class of 753 high school seniors, what is the probability that
- (a) 30 or more will live beyond their 90th birthday?
 - (b) more than 40 will live beyond their 90th birthday?

3. The time in hours during which an electrical generator is operational is a random variable that follows an exponential distribution. If the average operational time is 160 hours, what is the probability that a generator of this type will be operational between 60 and 160 hours ?