

4. The test scores of the population of Mat 117 students at ASU are normally distributed with mean $\mu = 72$ and standard deviation $\sigma = 10$.

a. What percent of students had scores larger than 85?

b. What is the probability that randomly selected student will have a test score X less than 62?

c. What is the test score that is in the 95th percentile of the distribution of the test scores .

1. Suppose we consider a population of people whose weight is normally distributed with mean $\mu = 150$ lb and standard deviation $\sigma = 18$ lb.

Let \bar{X} denote the mean of the sample of size 9 from that population.

a. What is the sampling distribution of \bar{X} for samples of size 9? Give the mean and the standard deviation of that distribution, use proper symbols.

b. Compute the probability that, for a sample of size 9, \bar{X} will estimate population mean μ with an error of no more than 3 lb?

c. What is the probability that, for a sample of size 9, \bar{X} will exceed 156 lb?

d. Could we answer above questions if we knew that population has not a normal distribution, but highly left skewed distribution? Why or why not?