

Standard Normal Random Variables

1. Suppose Z is a standard normal random variable. What is $P(Z \leq 1.2)$?

2. Suppose Z is a standard normal random variable. What is $P(Z \leq -2.4)$?

3. Suppose Z is a standard normal random variable. What is $P(Z \leq -0.4)$?

4. Suppose Z is a standard normal random variable. What is $P(-0.4 \leq Z \leq 1.2)$?

5. Suppose Z is a standard normal random variable. What is $P(Z > 2)$?

Normal Cumulative Distribution Function (CDF)

6. The dressed weights of Excelsior Chickens are approximately normally distributed with mean 3.20 pounds and standard deviation 0.40 pound. About what proportion of the chickens have dressed weights greater than 3.60 pounds?
7. Suppose that an automobile muffler is designed so that its lifetime (in months) is approximately normally distributed with mean 26 months and standard deviation 4 months. The manufacturer has decided to use a marketing strategy in which the muffler is covered by warranty for 18 months. Approximately what proportion of the mufflers will fail before the warranty expires?
8. Suppose that the daily demand for change (meaning coins) in a particular store is approximately normally distributed with mean \$800.00 and standard deviation \$60.00. What is the probability that, on any particular day, the demand for change will be below \$600?

