

1. The lifetimes of 10,000 watch batteries are normally distributed. The mean lifetime is 500 days. The standard deviation is 60 days. Sketch a normal curve that represents this distribution; label the mean and 3 standard deviations.

Estimate how many watch batteries will last for each of the following intervals.

a.) 440 – 560 days

b.) 380 – 620 days

c.) 320 – 680 days

d.) 410-590 days? (In addition to your answer, also write down what you have to enter into your calculator.)

2. A group of students weighs 500 US pennies. They find that the pennies have normally distributed weights with a mean of 3.1g and a standard deviation of 0.14g

a) What percentage of pennies will weigh between 2.8 and 3.3g?

b) What percentage of pennies will weigh between 2.11 and 3.5g?

c.) What percentage of pennies will weigh less than 2.96g?

d.) What percentage of pennies will weigh more than 3.4g?

3. A set of 1000 values has a normal distribution. The mean of the data is 120, and the standard deviation is 20.

a) What percent of the data is in the range 110 to 130?

b) What percent of the data is in the range 90 to 110?

c) How many values are within the limits 100 and 150?

d) How many values are greater than 140?

e) How many values are within one standard deviation from the mean?

4. Suppose the heights of adult men are normally distributed. The heights of a sample of 30 men are shown below in inches.

65, 83, 69, 67, 69, 67, 67, 72, 85, 68, 73, 65, 67, 65, 72, 71, 67, 73, 68, 72, 61, 75, 66, 78, 65, 71, 68, 76, 67, 68

a) Compute the mean and standard deviation of the sample.

b) Draw a normal curve that represents the distribution of adult male height based on the sample.

5. On the blank normal curve, label the percentages, mean, and standard deviations that are associated with it.

