# AP Statistics Worksheet on Normal Distribution Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The mean life of a tire is 30,000 km. The standard deviation is 2000 km. Draw the normal distribution curve
2. 95% of all tires will have a life between \_\_\_\_\_\_ km and \_\_\_\_\_\_ km.
3. What percent of the tires will have a life that exceeds 26,000 km?
4. If a company purchased 2000 tires, how many tires would you expect to last more than 28 000 km? (You have to think about this one!)
5. Given an approximately normal distribution with a mean of 175 and a standard deviation of 37.

**a)** Draw a normal curve and label 1, 2, and 3 standard deviations on both sides on the mean.

**b)** What percent of values are within the interval (138, 212)?

**c)** What percent of values are within the interval (101, 249)?

**d)** What percent of values are within the interval (64, 286)?

**e)** What percent of values outside the interval (138, 212)?

**f)** What percent of values are outside the interval (101, 249)?

**g)** What percent of values are outside the interval (64, 286)?

1. 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.
2. What percentage of the people in line waited for more than 30 minutes?
3. If 4000 ticket buyers were in line, how many of them would expect to wait for less than 15 minutes?
4. On a recent math test, the mean score was 78 and the standard deviation was 6. Assuming the scores were normally distributed:
5. What was the probability a student failed (score under 70)?
6. What proportion of students had Bs (score between 80 and 90)?
7. In an Oreo factory, the mean mass of a cookie is given as 40 g. For quality control, the standard deviation is 2 g.
8. What percent of cookies are within one gram of the mean (between 39 g and 41 g)?
9. Cookies are rejected if they weigh less than 35 g. How many cookies would you expect to be rejected in a sample of 10,000 cookies?