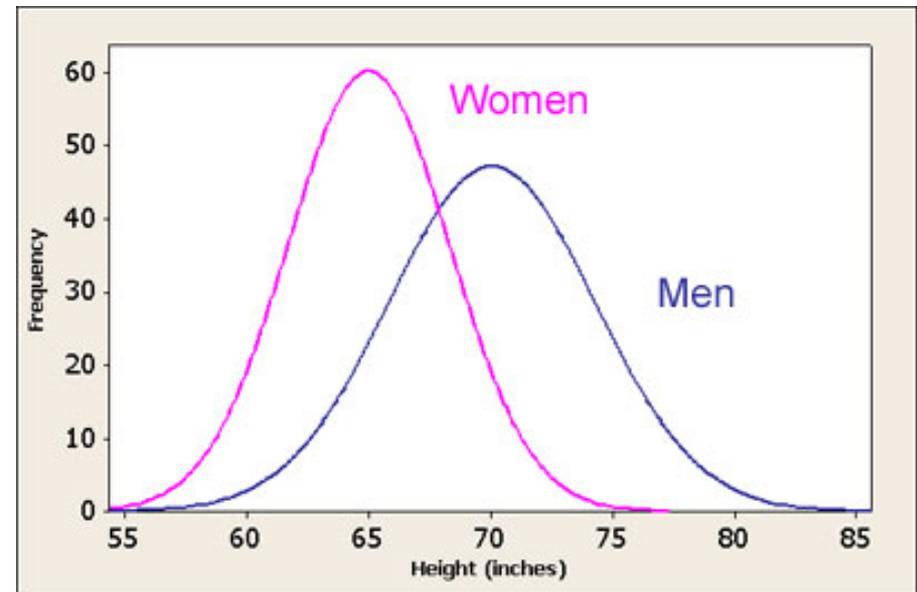
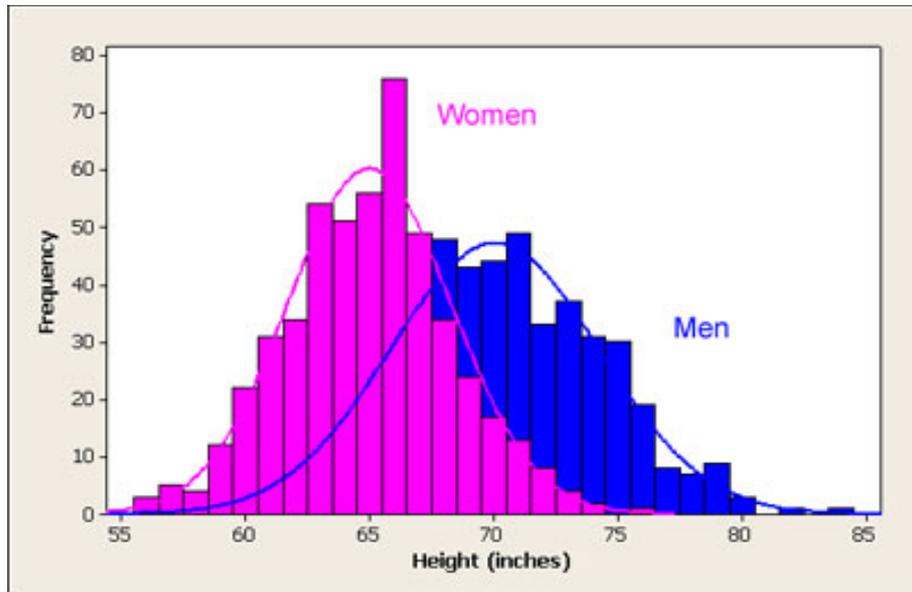


STATISTICS – NORMAL DISTRIBUTION- HEIGHTS

The **normal distribution** is the most important distribution in statistics. It describes a symmetric bell-shaped distribution. People's heights and weights are all roughly bell-shaped and symmetrical around a central value called the mean. In the U.S. population, about **14.5 percent** of all men are six feet or over. Roughly **1%** of US women are **6 feet** tall or taller. The equivalent height cutoff for US men (only **1%** of population taller) is about **6'4"**.

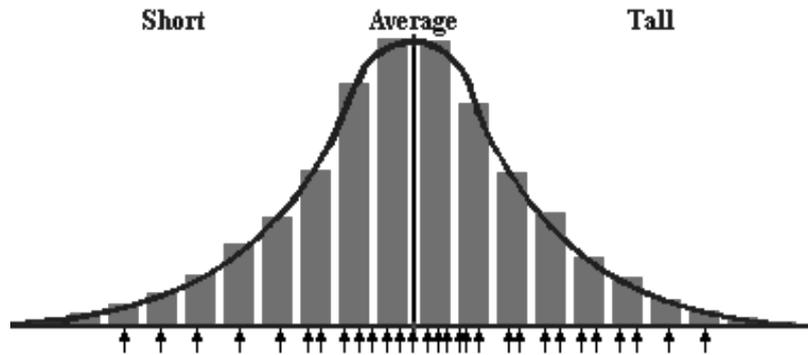


With the help of your teacher, measure and record the height of the students in your class to the nearest inch. Using graph paper make a graph which, on the bottom x axis, are the heights from the shortest to the tallest students in inch steps. On the y or upward axis label the number of students at a particular height from 0 to the highest number. For each height on the graph, mark the number of students at that height. Did you get a bell curve? If not what may be the reasons? What would happen to the bell curve if you were to plot the same graph but now included all the students in your school in your grade?

Percent measure of the height of 100 American men

| | | | | | | | | | | | | | | |
|---------------|------|------|------|------|------|------|------|-------|-------|----|------|------|------|------|
| Height | 5'3" | 5'4" | 5'5" | 5'6" | 5'7" | 5'8" | 5'9" | 5'10" | 5'11" | 6' | 6'1" | 6'2" | 6'3" | 6'4" |
| Count | 1% | 3% | 4% | 6% | 7% | 12% | 17% | 17% | 12% | 7% | 6% | 4% | 3% | 1% |

For a man 5 feet 10 inches tall, what percent of the men's population would be 5 feet 9 inches or shorter? What percent of the men's population would be 5 feet 11 inches or taller?



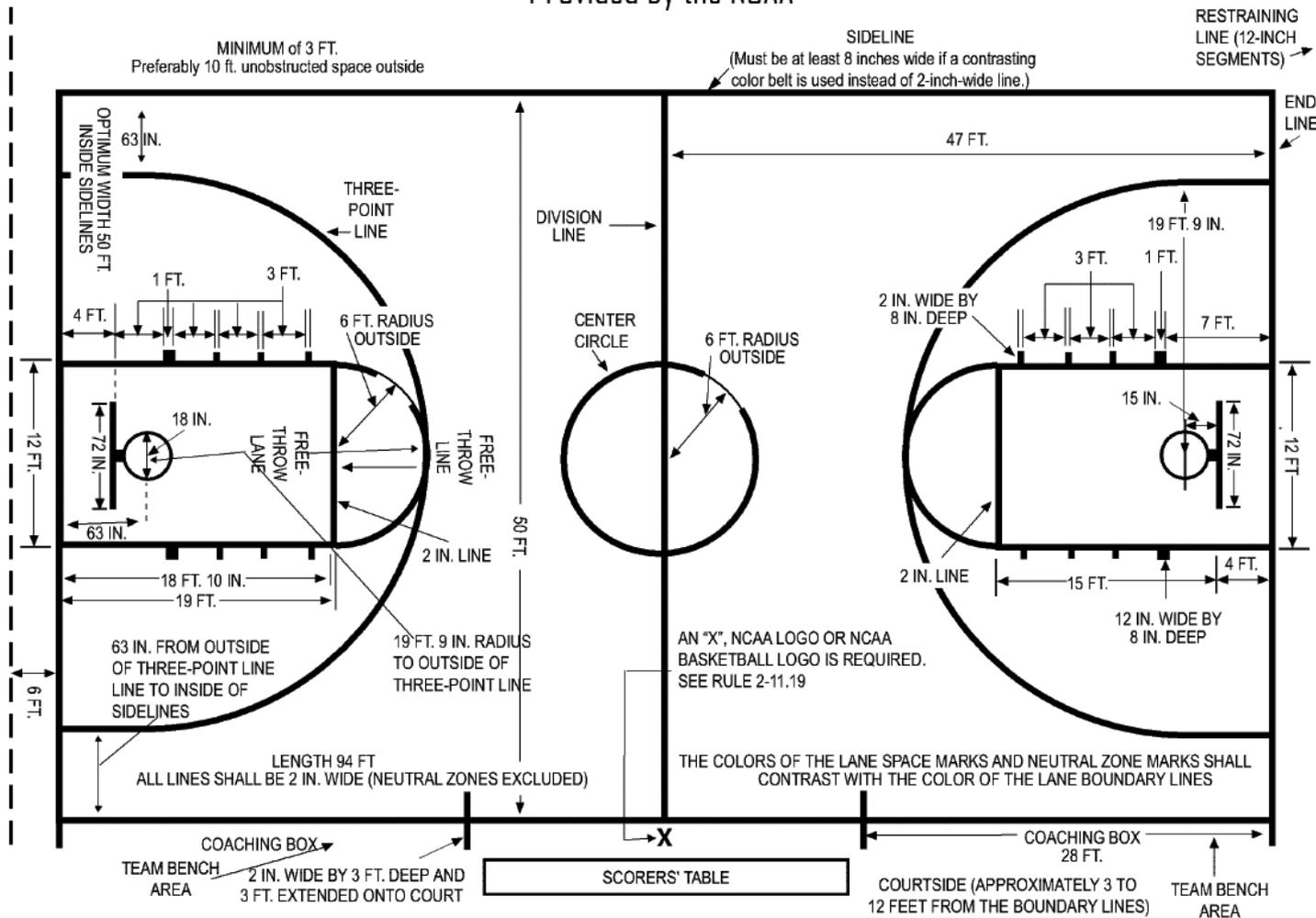
One internet study indicates that out of 7.25 billion people in the world, 2,800 are seven feet tall or better. That's one in every 1.6 million people. Of the 185,421 players listed on a high school sports website, 40 were seven feet or taller. That's one in every 4,635 high school players.

Some very famous very tall guys

| Players | Number of US population this tall |
|--|-----------------------------------|
| Michael Jordan 6'6", Kobe Bryant 6'7" | 130,000 |
| Larry Bird 6'9", Karl Malone 6'9" | 3,200 |
| Shaquille O'Neal 7'1", Wilt Chamberlain 7'1", Kareem Abdul-Jabbar 7'2" | 28 |
| Yao Ming 7'5" | 2 in the world |

Dimensions of NCAA College Basketball Court

Provided by the NCAA



How many (feet and inches) is it to the center of the basketball hoop for an NBA court from the 3 point line? Is there any difference for a shot from the center of the court AND for a shot from the sideline? How many (feet and inches) is it to the center of the basketball hoop for an NCAA court from the 3 point line? Is there any difference for a shot from the center of the court AND for a shot from the sideline?