CS-Statistics	**More on Normal Distribution**
Tutorial 5	

1. Heights of 25 -year-old men in a certain region have mean 69.75 inches and standard deviation 2.59 inches. These heights are approximately normally distributed. Sketch a qualitatively accurate graph of the density function for X .
    a) Find the probability that a randomly selected 25 -year-old man is more than 69.75 inches tall.
    b) Find the probability that a randomly selected 25 -year-old man is more than 72 inches tall.

2. The RV Z has a standard normal distribution.
    a) Find the value $z*$ of Z so that $P(Z < z*) = 0.0125$. The value $z*$ is a cuts off a left tail of area 0.0125 in the standard normal distribution,
    b) Find the value $z*$ of Z so that $P(Z > z*) = 0.0250$. The value $z*$ is a cuts off a right tail of area 0.0250 in the standard normal distribution,
    c) Find the values za such that: $P(-za < Z < za) = 0.68$ and $P(-za < Z < za) = 0.95$ You need the statistical tables, see, for example, here.

3. The lifetimes of the tread of a certain automobile tire are normally distributed with mean 37,500 km and standard deviation 4,500 km. Find the probability that the tread life of a randomly selected tire will be between 30,000 and 40,000 km.

4. The final exam scores in a statistics class were normally distributed with a mean of 63 and a standard deviation of five.
    a) Find the probability that a randomly selected student scored more than 65 on the exam.
    b) Find the probability that a randomly selected student scored less than 80
    c) Find the 90th percentile (that is, find the score k that has 90% of the scores below k and 10% of the scores above k).
    d) Find the 70th percentile (that is, find the score k such that 70% of scores are below k and 30% of the scores are above k).