Exercise 1

An elevator is used to transport packages whose weight fluctuates as a normal with mean 200 kg. It is known that 25% of packages have a weight greater than 210 kg. Answer the following questions:

a) What is the probability that taking a random package its weight was lower than 190 kg.
b) The maximum weight supported by the elevator is 2100 kg. If usually the elevator loads 10 packages, what percentage of the times will appear problems for exceeding the maximum weight?

Exercise 2

In manufacturing of a certain device it is used a kind of screws whose resistance to torsion fluctuates normally with mean 17 N and standard deviation 3.5 N. The screw is placed in the device by means of a screwdriver that performs a tightening force over it. This tightening force is distributed normally with a mean of 11 N and standard deviation 3N. If the thightening force is greater than the resistance to torsion the screw breaks. What percentage of screws will break with the screwdriver?

Exercise 3

The number of mistakes in a function, when a program is written the first time, follows a Poisson distribution with mean 0.8 mistakes by function. Compute the probability, that in a firstly written program formed by 500 functions, there was lower than 350 mistakes.