1. Maya shoots a basketball 100 times and makes 73 shots.
   (a) Assuming shots are independent, find a 95% confidence interval for the probability p of her making a single shot.

   (b) Estimate the variance of her making a shot using $\frac{1}{n-1}\sum_{k=1}^{n}(x_k - \overline{x})^2$

2. Packer High School's track and field team averages 16 meters on their shot put throws, with a standard deviation of 1.7 meters. Assuming throws are normally distributed, what is the probability that an athlete throws less than 14 meters?

3. People visit Grimaldi's Pizzaria. Hour by hour, the number of people who visit is 11,5,3,5,4,8,5,4,2,9.
   (a) Find a 95% confidence interval for λ, the average number of people who visit in an hour.

   (b) Estimate the variance using $\frac{1}{n-1}\sum_{k=1}^{n}(x_k - \overline{x})^2$

4. An art auction house in Amsterdam's average sale is 3.2 million euros with a standard deviation of 800,000 euros. Assuming sales are normally distributed, what is the probability that a piece of art is sold for more than 5 million euros?

5. The age of onset of multiple sclerosis is well described by a normal random variable with unknown mean and with standard deviation 7.6 years. The age of onset is measured for 32 individuals. Find the probability that the sample mean falls within 2 years of the true population mean.