1. Suppose 250 randomly selected people are surveyed to determine if they own a tablet. Of the 250 surveyed, 98 reported owning a tablet. Using a 95% confidence level, compute a confidence interval estimate for the true proportion of people who own tablets.

2. The mortgage department of a large bank is interested in the nature of loans of first-time borrowers. This information will be used to tailor their marketing strategy. They believe that 50% of first-time borrowers take out smaller loans than other borrowers. They perform a hypothesis test to determine if the percentage is **the same or different from 50%**. They sample **100 first-time borrowers** and find **53** of these loans are smaller that the other borrowers. For the hypothesis test, they choose a 5% level of significance.

3. A company produces metal pipes of a standard length, and claims that the standard deviation of the length is at most 1.2 cm. One of its clients decides to test this claim by taking a sample of 25 pipes and checking their lengths. They found that the standard deviation of the sample is 1.5 cm. Does this undermine the company’s claim? Use a = 0.05 as the level of significance.