Assignment:

1. The BSF wants to set up a camp on the hill-top of kargil for a constant watch at the border. They want to measure the distance between the camp and the border line. However, for atmospheric disturbance, any measurement will not yield the exact distance d. They decided to make a series of measurements and take their average as an estimate of actual distance. If they believe that the successive measurements are independent random variables with mean d and standard deviation 2 km, then how many measurementsare required to be 95% certain that the estimate is accurate within ± 1 km.

2. Click fraud has become a major concern as more and more companies advertise on the internet. When Google places an ad for a company with its search results, the company pays a fee to Google each time someone clicks on the link. That's fine when it's a person who's interested in buying a product or service, but not so good when it's a computer program pretending to be a customer. An analysis of 1200 clicks coming into a company's site during a week identified that 175 of these clicks are fraudulent. Compute the confidence interval with 95% confidence for the proportion of fraudulent clicks.

3. The life in hours of a 75- watt light bulb is known to be normally distributed with σ = 25 hours. A random sample of 100 bulbs has a mean life of x' = 1014 hours. Construct a 95 % two-sided confidence interval on the mean life.