1. Suppose we heard that the scuba driver can stay an average of 78 minutes under water. We do not believe about the result and consider testing the result. We found that the null hypothesis is 78 minutes and alternative hypothesis differs from 78 minutes. We have selected 50 random samples of scuba drivers and found that the average scuba driver stay under water is 74 minutes with standard deviation of 3 minutes. What decision did you make?
2. Based on Analysis we found the average turnover of a company to be 450000 dollars. We expect that this year average turnover to be different and therefore decided testing the result. We randomly sample 85 companies and found that the sample mean is 480000 dollars, with standard deviation of 100000 dollars. Consider conducting test statistics and conclude on your result.
3. The 95% confidence interval of a variable lies between (14.12, 16.08). We have drawn a sample of 350 respondents and assumed that the null hypothesis of a population mean is 15. The alternative hypothesis is the population mean is different from 15. What would you conclude?
4. A professor conducted an experiment to test whether student likes to go to swimming pool or beaches. Last year he found that 84% of the student preferred going to the beach. The professor expected different result this year. Therefore, he collected 100 random samples by asking the opinion of the student and found that still 84% student preferred the beach. What can we conclude?
5. A professor reading an article found that 78% of the Americans have driving license. He did not believe in the result. The professor has a theoretical reason to think that it should be greater than 78%. Write down your null and alternative hypothesis?
6. Given a significant of 0.05, what does p value of 0.03 mean?