

## HW-Ch.10

**Q1.** The article "Ozone for removal of acute toxicity from logyard run-off" (M. Zenaitis and S Duff, 2202, Ozone Science and Engineering, 83-90) presents chemical analyses of runoff water from sawmills in British Columbia. Included were measurements of pH for six water specimens: 5.9, 5.0, 6.5, 5.6, 5.9, and 6.5. Experience says that these type of pH contents follow normal distribution.

- a. Test the hypothesis that true pH content is more than 5.5.
- b. Test the hypothesis that true pH content is less than 5.5.
- c. Test the hypothesis that true pH content is 5.5.
- d. Would you modify the method of testing if sample size were large?

**Q2.** The pH content of runoff water from sawmills in British Columbia is considered. **Six** water specimens produce a mean of 5.5. Experience says that these type of pH contents follow normal distribution with standard deviation 0.81. Test the claim that true pH content is more than 5.5. Would you modify the method of estimation if sample size were large?

**Q3.** The pH content of runoff water from sawmills in British Columbia is considered. **Thirty** water specimens produce a mean of 5.5. Experience says that these type of pH contents follow normal distribution with standard deviation 0.81. Test the claim that true pH content is different from 5.5. Would you modify the method of estimation if sample size were large?

**Q4.** The pH content of runoff water from sawmills in British Columbia is considered. **Thirty** water specimens produce a mean of 5.5 and standard deviation 0.81. Test the claim that true pH content is less than 5.5.

**Q5.** Concentrations of atmospheric pollutants such as carbon monoxide (CO) can be measured with a spectrophotometer. In a calibration test, 40 measurements were taken of a laboratory gas sample that is known to have a CO concentration of 80 parts per million (ppm). A measurement is considered to be satisfactory if it is within 5 ppm of the true concentration. Of the 40 measurements, 36 were satisfactory. Test the claim that the proportion of satisfactory measurements is more than 0.80.