Renal Disease

The mean serum-creatinine level measured in 12 patients 24 hours after they received a newly proposed antibiotic was 1.2 mg/dL.

***7.1** If the mean and standard deviation of serum creatinine in the general population are 1.0 and 0.4 mg/dL, respectively, then, using a significance level of .05, test whether the mean serum-creatinine level in this group is different from that of the general population.

***7.2** Compute a two-sided 95% CI for the true mean serum-creatinine level in Problem 7.1

***7.3** Suppose the sample standard deviation of serum creatinine in Problem 7.1 is 0.6 mg/dL. Assume that the standard deviation of serum creatinine is not known, and perform the hypothesis test in Problem 7.1.

***7.4** Compute a two-sided 95% CI for the true mean serum-creatinine level in Problem 7.3.

**Ophthalmology**

The drug diflunisal is used to treat mild to moderate pain due to osteoarthritis (OA) and rheumatoid arthritis (RA). The ocular effects of diflunisal had not been considered until a study was conducted on its effect on intraocular pressure in glaucoma patients who were already receiving maximum therapy for glaucoma [5].

***8.19** Suppose the change (mean +/- *sd* ) in intraocular pressure after administration of diflunisal (follow-up – baseline) among 10 patients whose standard therapy was methazolamide and topical glaucoma medications was -1.6 +/- 1.5 mm Hg. Assess the statistical significance of the results.

***8.20** The change in intraocular pressure after administration of diflunisal among 30 patients whose standard therapy was topical drugs only was -0.7 +/- 2.1 mm Hg. Assess the statistical significance of these results.

***8.21** Compute 95% CIs for the mean change in pressure in each of the two groups identified in Problems 8.19 and 8.20.

***8.22** Compare the mean change in intraocular pressure in the two groups identified in Problems 8.19 and 8.20 using hypothesis-testing methods.