1. Make at least two plots (by computer or hand) that effectively picture both the spatial locations and the TCE concentrations for the data in Table 2.2 in Kitanidis. Comment on the relevant merits of your plots. What might you do differently if instead of 56 observations there were 560 observations? 56,000 observations?

2. At the 29 locations given for the data in Table 2.1, simulate 100 Gaussian random fields $Z$ with mean 0 and covariance function $\text{cov}(Z(x), Z(y)) = 2000 \exp(-|x - y|/2.5)$. For each simulated realization, calculate the sample mean, the sample variance and the sample range and plot the empirical distributions of these three statistics. Using theory and/or simulations, compare these results to what one would get from 29 independent and identically distributed Gaussian observations with mean 0 and variance 2000. (Note: geoR has a command grf for simulating Gaussian random fields.)

3. For each of the first ten of your simulations in question 2, compute empirical variograms using some computer package (such as geoR) and plot them on a common plot. Comment on the nature of the variations between empirical variograms.