02545 GIS Exercise

1. make histogram over data from Clark (1979) p. 11.
   (5%)

2. calculate mean, standard deviation, median and iqr (inter-quartile-range) of data from Clark (1979) p. 11.
   (5%)

3. calculate and sketch semivariograms in E-W and N-S directions of data from Clark (1979) p. 11 (four lags in each direction: 100', 200', 300' and 400'); suggest semivariogram models; consider isotropy/anisotropy
   (35%)

4. ponder upon requirements to a covariance matrix (hint: think about requirements to the variance of linear combinations of stochastic variables)
   (5%)

5. estimate the weights in point –3 of Figure 1 in the handout; use nearest neighbor interpolation, inverse distance interpolation, and ordinary kriging with the spherical semivariogram model and three different semivariogram/autocovariance function parameters 1) $(C_0, C_1) = (0, 1)$ 2) $(C_0, C_1) = (0.5, 0.5)$ and 3) $(C_0, C_1) = (1, 0)$; in all three cases $R = 6$
   (50%)

Allan Aasbjerg Nielsen, IMM