Problem Sheet 2

1. Show how you would use the transformation method to sample from the Weibull distribution which has cdf

$$1 - \exp\left(-\alpha x^\beta\right)$$

for parameters $\alpha, \beta > 0$. You may assume that you have available a suitable method to sample from unif[0,1].

2. (Notation as in stratified sampling section of notes). Show that

$$\int_{\Omega_k} (f(x) - c)^2 p(x) dx$$

is minimized by the choice $c = \overline{f_k}$. Hence demonstrate that

$$\sigma_s \leq \sigma.$$