# Day 1

1. Consider a random sample of size 120 from a normal distribution. The outcome of the sample standard deviation is 2.
   1. Find an 80% upper confidence limit for σ2.
   2. Find a 90% lower confidence limit for σ2.
2. Consider two independent random samples of size 40 and 80 from N(μ1, σ12) and N(μ2, σ22), respectively. The outcomes of the sample standard deviations are 2 and 3, respectively. The outcomes of the sample means or 11 and 77, respectively.
   1. Find a 95% equal tailed confidence interval for σ12/σ22.
   2. Find a 95% equal tailed confidence interval for μ1 - μ2. Assume variances are known.