These questions were covered in details during the discussion sections.

1. Let X_1,...,X_n form a random sample from a Bernoulli distribution with unknown parameter θ.
   (a) Find the moment generating function (m.g.f.) of X_1.
   (b) Find the first moment of X_1 using its m.g.f..
   (c) Find the distribution of $\sum_{i=1}^{n} X_i$ using the m.g.f. of the Bernoulli distribution.
2. Suppose that a random sample is to be taken from the normal distribution with unknown mean θ and standard deviation 2.
   (a) How large a random sample must be taken in order that $E_\theta(|\bar{X}_n - \theta|^2) \leq 0.1$ for every possible θ?
   (b) How large a random sample must be taken in order that $E_\theta(|\bar{X}_n - \theta|) \leq 0.1$ for every possible θ?
   (c) How large a random sample must be taken in order that $Pr(|\bar{X}_n - \theta| \leq 0.1) \geq 0.95$ for every possible θ?