1. page 300 problem 2(a).

2. page 302 problem 6. Use two methods to solve this: (a) the convolution formula (b) the moment generating function.

3. page 301 problem 3 (a). Use two different methods to solve this.

4. Suppose $X_1, X_2, \ldots, X_n$ are independent, all have exponential distribution with a parameter $\lambda$.

   Find the moment generating function of $X_1 + X_2 + \ldots + X_n$.

   Find the moment generating function of

   $$\frac{(X_1 + X_2 + \ldots + X_n) - n/\lambda}{\sqrt{n}}.$$