1. Chapter 4 in Ross: 14, 20, 27, 35, 36, 38; Theoretical Exercise 3, 6, 7

2. Suppose that X is a discrete random variable with the following probability mass function

$$p(i) = e^{-\lambda}\frac{\lambda^i}{i!}, \ \ i = 0, 1, 2, \ldots$$

    Show that

$$E[X^n] = \lambda E[(X+1)^{n-1}]$$