1. $X \in \text{Po}(8)$. Compute the probability $P(X \leq 5)$.

2. $X \in \text{Bin}(10, 0.4)$. Compute $E(\sqrt{X})$ and $V(\sqrt{X})$.

3. The r.v. has density function
$$f_X(X) = \frac{e^x}{\left(1 + e^x\right)^2}, \quad -\infty < x < \infty.$$

    Calculate $E(X)$ and $V(X)$. At least in the latter case you need to use your calculator.

4. If X is a discrete r.v. with probability function
$$p_X(k), \quad k = 0, 1, 2, \ldots,$$
    show that
$$V(X) = \sum_k k^2 p_X(k) - \mu^2$$
    where $\mu = E(X)$.

Answers:
1. 0.1912
2 1.9545 and 0.1798
3 0 and 3.2899 $(= \pi^2/3)$