Seminar 2
Probabilities
DEDP

1. Let A be a **discrete** random variable with uniform distribution $\mathcal{U}$ $[0, 10]$
   a. How many different realizations of A are possible?
   b. Draw the PMF of A
   c. Find the probability that A is an odd number
   d. Find the probability that $A \in [3, 7]$

2. Compute the probability that three r.v. X, Y and Z i.i.d. $\mathcal{N}(-1, 1)$ are all positive simultaneously

3. Consider 3 three normal random variables $A \sim \mathcal{N}$ $(\mu = 1, \sigma^2 = 3)$, $B \sim \mathcal{N}$ $(\mu = -4, \sigma^2 = 3)$, $C \sim \mathcal{N}$ $(\mu = 5, \sigma^2 = 3)$.
   a. Is it more likely that (A, B, C) has values around $(2, -6, 3)$ or around $(-2, -3, 2)$?
   b. Find a set of values (x, y, z) such that (A, B, C) are as likely to be in a vicinity of (x, y, z) as in a vicinity of $(2, -6, 3)$.