Q1: Two dice are rolled. The outcome of the first dice is subtracted from that of the second dice, and the difference is termed a discrete random variable, X.

(a) What is the range of X?

(b) Obtain and plot the probability mass function:

$$p_X(x) = \mathrm{P}(\{X = x\}).$$

(c) Show that

$$\sum_x p_X(x) = 1$$