1 The random variables X and Y have independent distributions $X \sim \text{Po}(3)$ and $Y \sim \text{Po}(2)$ respectively.

(a) Find $\text{P}(2 < X < 5)$. [2]

(b) Find $\text{P}(X + Y > 2)$. [3]

(c) The total of 100 random values of X and 150 random values of Y is denoted by T.

Use a suitable approximating distribution to find $\text{P}(T < 560)$. [4]