Poisson Distribution - Overview (20/2/24)

Q1

Each week Isaac buys a lottery ticket, where the prize £X has a Poisson distribution with mean 1.

What is the probability that his average win over 10 weeks is more than £1?

Q2 [Practice/E]

What are the (main) conditions for a Poisson model to be appropriate?

Q3 [Practice/E]

If $X \sim Po(\lambda)$, what is the most common value of X?

(a) If $\lambda = 5$ (b) If $\lambda = 5.5$

Q4

The probability of there being a typographical error on a particular page of a 500 page book is assumed to be 0.09. Using a suitable approximation, what is the probability that at least one book out of 10 (each having 500 pages) contains more than 60 errors in total?