Question #71313, Math / Statistics and Probability

A100 page book is known to have 200 printing errors distributed randomly through the pages. The probability that one of the page will be found to be completely free of errors is?

Solution

In the given case, one should use the Poisson distribution.

$$P(x)=\frac{\lambda^x e^{-\lambda}}{x!};$$

where

$$\lambda=\frac{200}{100}=2$$

$$P(x)=\frac{2^0 e^{-2}}{0!}=0.1353$$

Answer: the probability that one of the page will be found to be completely free of errors is 0.1353.