長庚大學期中、期末考試答案用紙

科目

HW 1

學年度 第 學期 考 試 2 系 姓名 江 [illegible] 學號 B07[illegible]

(1) ① import scipy.stats as st

prob = st.binom.pmf (k=1, n=10, p=0.1)

prob

② 1

③ 9/10

(2) ① import scipy.stats as st

prob = st.binom.pmf (k=1, n=100, p=0.01)

prob

(3) ① $P(X=10) = \binom{100}{x}(0.05)^x(1-0.05)^{100-x}$

$P(X=10) = \binom{100}{10}(0.05)^{10}(0.95)^{90} \Rightarrow$ ~~[illegible]~~

$= \binom{100}{10}(0.05)^{10}(0.95)^{90} = 1.6715 \times 10^{-2}$

② A buyer would suspect the claim is not correct because assuming a claim, probability of having 10 defective item in sample is 1.6715×10^{-2} and event would occur only 1.6715%

（請翻面繼續作答）

(4).

$b(x;n,p) = \binom{n}{x} \cdot p^x \cdot q^{n-x}$ $\quad n \to \infty,\ p \to 0,\ n \cdot p = \mu$

$p(x;\mu) = \frac{\mu^x}{x!} \cdot e^{-\mu}$