

Given name and surname: _____

Student No: _____

Signature: _____

INSTRUCTIONS:

1. Please write everything in **ink**.
2. This quiz is a 'closed book' test, duration **20** minutes.
3. Only non-programmable calculators are permitted.
4. The text has two pages, and it contains two questions. Read the question carefully. Fill in answers in designated spaces. Your work must justify the answer you give. Answers without supporting work will **not** be given credit.

USEFUL FORMULAS:

For $x \geq 0$, $t \in [0, 1)$ and $k = 0, 1, 2, \dots$, if the uniform distribution of deaths (UDD) assumption holds for the life-status (x), then the following is true

$${}_{t+k}p_x \approx (1-t){}_k p_x + t{}_{k+1}p_x.$$

GOOD LUCK!

Question 1 Use ILT and the assumption of UDD to compute ${}_{2.25}p_{85.5}$.

Question 2 Consider the joint life status $(x : y)$, where $x \geq 0$, $y \geq 0$ and the RV's $T(x)$ and $T(y)$ are independent and identically distributed as a uniform RV $U \sim Uni[0, 1]$. Compute the full expectancy of life $\overset{\circ}{e}_{x:y}$.