MAP 4175 / 5177 Name:_____
Quiz 4 Date: September 25, 2019

Each problem is worth 10 points. Show all work for full credit, and use correct notation.

For Numbers 1 and 2, you are given the following select-and-ultimate table for a 3-year select period:

x	$q_{[x]}$	$q_{[x-1]+1}$	$q_{[x-2]+2}$	q_x
70	0.08	0.09	0.10	0.11
71	0.09	0.10	0.11	0.12
72	0.10	0.11	0.12	0.13
73	0.11	0.12	0.13	0.14
74	0.12	0.13	0.14	0.15

1. Determine the probability that a person selected at age 70 dies between ages 72 and 74.

2. Using the UDD assumption, determine the probability that a person selected at age 70, who is now age 71.5, dies after age 73.

For Numbers 3 and 4, use the SULT.

3. Using the CF assumption between integer ages, determine ${}_{1.3|13.7}q_{20}$

4. Using the UDD assumption between integer, determine ${}_{10.2}p_{20.25}$

5. You are given:

   (i) $l_{25} = 1000$
   (ii) $l_{40} = 940$
   (iii) $l_{70} = 750$

   Using linear interpolation of the l_x values between ages 25 and 40, and exponential interpolation of the l_x values between ages 40 and 70, determine ${}_{25}p_{30}$