

Quiz 1

Show all work for full credit, and use correct notation.

1. Given $q_{80+k} = 0.1(k + 1)$ for $k = 0$ and 1 , determine ${}_2q_{80}$.

2. Given ${}_x p_0 = \left(\frac{100-x}{100}\right)^{0.5}$, $0 \leq x \leq 100$, determine ${}_{13}p_{51}$.

3. Given

x	q_x
70	0.3
71	0.4
72	0.5

determine the probability that a 70-year old dies between ages 71 and 72.

4. Given ${}_kq_{96} = 0.1(k + 1)$ for $k = 0, 1, 2,$ and 3 , determine $Var[Min(K_{96}, 1)]$.

5. Given ${}_{10}p_{30} = 0.9$ and $\int_{10}^{20} f_{30}(t)dt = 0.1$, determine ${}_{20}p_{30}$.