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 $_2p_{80}$

2. Given $T_{40} = 39.35$, determine the values of K_{40}, $K_{40}^{(2)}$, $K_{40}^{(4)}$, and $K_{40}^{(12)}$

3. Given $K_{80}^{(4)} = 10.50$, determine the range of possible values of T_{80}

4. Given

x	q_x
90	0.3
91	0.4
92	0.5
93	0.6

determine the value of the deferred mortality probability $_{2|2}q_{90}$

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