MAP 4175 / 5177
Exams 1 and 2

Name:_____

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

1. Given $p_{35} = 0.98$, determine $q_{35}$.

2. Given $_{35}q_{35} = 0.46$ and $_{20}p_{50} = 0.6$, determine $_{15}q_{35}$.

3. Given $_xp_0 = \left(\frac{100-x}{100}\right)^{0.5}$, $0 \leq x \leq 100$, determine $_{28}p_{36}$.

4. Given

| $x$ | $q_x$ |
|-----|-------|
| 80  | 0.3   |
| 81  | 0.4   |
| 82  | 0.5   |

determine $_3q_{80}$.

5. Given $_{10|20}q_{30} = 0.2$ and $_{10}q_{30} = 0.15$, determine $_{30}p_{30}$.

6. Given $_{k|}q_{40} = 0.02(k+1)$ for $k = 0,1,2,\dots,49$, determine $_5p_{40}$.

7. Given $_{15|20}q_{25} = 0.18$ and $_{15}q_{25} = 0.1$, determine $\int_{20}^{\infty} f_{40}(t)dt$.

8. Given $q_{70+k} = 0.1(k+1)$ for $k = 0,1,2,\dots,9$, determine $_3q_{70}$.

9. Given $_tp_x = e^{-0.04t}$, determine $\overset{o}{e}_x$.

10. Given $e_{44} = 32.5$, $p_{44} = \frac{65}{66}$, and $p_{45} = \frac{64}{65}$, determine $e_{46}$.