

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

For a multi-state model with states 0, 1, and 2, you are given:

$$\mu_x^{01} = 0.01 \quad \mu_x^{02} = 0.02 \quad \mu_x^{12} = 0.03$$

All other transition intensities are equal to 0. Determine

1. ${}_{10}p_x^{00}$

2. ${}_{10}p_x^{11}$

3. ${}_{10}p_x^{22}$

4. ${}_{10}p_x^{10}$

5. If ${}_{10}p_x^{01} = 0.082$, then determine ${}_{10}p_x^{02}$.