1. Do problems 10.7, 10.10, 10.11, 10.29, and 10.30 from the textbook.

2. (Sample Question, #42, SOA) For a double-decrement table where cause 1 is death and cause 2 is withdrawal, you are given:
   (i) Deaths are uniformly distributed over each year of age in the single-decrement table.
   (ii) Withdrawals occur only at the end of each year of age.
   (iii) \( l_x^{(r)} = 1000 \)
   (iv) \( q_x^{(2)} = 0.40 \)
   (v) \( d_x^{(1)} = 0.45d_x^{(2)} \)
   Calculate \( p_x^{(2)} \).

3. (Fall 2006, #24, SOA) A population of 1000 lives age 60 is subject to 3 decrements, death (1), disability (2), and retirement (3). You are given:
   (i) The following absolute rates of decrement:
   
   \[
   \begin{array}{ccc}
   x & q_x^{(1)} & q_x^{(2)} \quad q_x^{(3)} \\
   60 & 0.010 & 0.030 & 0.100 \\
   61 & 0.013 & 0.050 & 0.200 \\
   \end{array}
   \]
   (ii) Decrement are uniformly distributed over each year of age in the multiple decrement table.
   Calculate the expected number of people who will retire before age 62.

4. (Fall 2006, #38, SOA) For a triple decrement table, you are given:
   (i) Each decrement is uniformly distributed over each year of age in its associated single decrement table.
   (ii) \( q_x^{(1)} = 0.200 \), \( q_x^{(2)} = 0.080 \), \( q_x^{(3)} = 0.125 \)
   Calculate \( q_x^{(1)} \).

5. (Spring 2007, #9, SOA) For a double decrement table, you are given:
   (i) In the single decrement table associated with cause (1), decrements are uniformly distributed over the year.
   (ii) In the single decrement table associated with cause (2), decrements occur at only two points during the year. Three-quarters of the decrements occur at time 1/5 and the remaining one-quarter occur at time 3/5.
   (iii) \( q_{25}^{(1)} = 0.10 \) and \( q_{25}^{(2)} = 0.12 \)
   Calculate \( q_{25}^{(2)} \).