

Question #133

Answer: C

Since only decrements (1) and (2) occur during the year, probability of reaching the end of the year is

$$p'_{60}^{(1)} \times p'_{60}^{(2)} = (1 - 0.01)(1 - 0.05) = 0.9405$$

Probability of remaining through the year is

$$p'_{60}^{(1)} \times p'_{60}^{(2)} \times p'_{60}^{(3)} = (1 - 0.01)(1 - 0.05)(1 - 0.10) = 0.84645$$

Probability of exiting at the end of the year is

$$q_{60}^{(3)} = 0.9405 - 0.84645 = 0.09405$$