

205. In a CCRC, residents start each month in one of the following three states: Independent Living (State #1), Temporarily in a Health Center (State #2) or Permanently in a Health Center (State #3). Transitions between states occur at the end of the month.

If a resident receives physical therapy, the number of sessions that the resident receives in a month has a geometric distribution with a mean which depends on the state in which the resident begins the month. The numbers of sessions received are independent. The number in each state at the beginning of a given month, the probability of needing physical therapy in the month, and the mean number of sessions received for residents receiving therapy are displayed in the following table:

State #	Number in state	Probability of needing therapy	Mean number of visits
1	400	0.2	2
2	300	0.5	15
3	200	0.3	9

Using the normal approximation for the aggregate distribution, calculate the probability that more than 3000 physical therapy sessions will be required for the given month.

- (A) 0.21
- (B) 0.27
- (C) 0.34
- (D) 0.42
- (E) 0.50