Problem of the Week
Problem E
The New and Improved Lane

Lane had a problem with being late for his first class of the day over his first three years of high school. However, this year he has made a conscious effort to improve.

On the first day of the week, usually Monday, Lane's probability of being on time for his first class of the day is $\frac{2}{3}$. If he is on time on any particular day, the probability that he will be on time the next day is also $\frac{2}{3}$. However, if he is late on any particular day, the probability of being late on the next day is one-half the probability of being late on the previous day.

Lane attends school each of the five days from Monday to Friday one week. What is the probability that he will be late for his first class at least three times in that week?

LANE'S
LATE
LOG