George Walls, president of Bradley School, is concerned about declining enrollments. Bradley School is a technical college that specializes in training computer programmers and computer operators. Over the years, there has been a lot of competition among Bradley School, International Technology, and Career Academy. The three schools compete in providing education in the areas of programming, computer operations, and basic secretarial skills.

To gain a better understanding of which of these school is emerging as a leader, George decided to conduct a survey. His survey looked at the number of students who transferred from one school to the other during their academic careers. On the average, Bradley School was able to retain 65% of those students it originally enrolled. Twenty percent of the student originally enrolled transferred to Career Academy, and 15% transferred to International Technology. Career Academy had the highest retention rate: 90% of it students remained at Career Academy for their full academic program. George estimated that about half the student who left Career Academy went to Bradley School, and the other half went to International Technology . International Technology was able to retain 80% of its student after they enrolled. Ten percent of the originally enrolled students transferred to Career Academy, and the other 10% enrolled in Bradley School.

Currently, Bradley School has 40% of the market. Career Academy, a much newer school, has 35% of the market. The remaining market share 25% consists of students attending International Technology. George would like to determine the market share for Bradley for the next year. What are the equilibrium market shares for Bradley School, International Technology, and Career Academy?

Central State University administers computer competency examination every year. These exams allow students to “test out” of the introductory computer class held at the university. Results of the exams can be placed in one of the following four states:

State 1: pass all of the computer exams and be exempt from the course

State 2: do not pass all of the computer exams on the third attempt and be required to take the course

State 3: fail the computer exams on the first attempt

State 4: fail the computer exams on the second attempt

The course coordinator for the exams has noticed the following matrix of transition probabilities:

1 0 0 0

0 1 0 0

0.8 0 0.1 0.1

0.2 0.2 0.4 0.2

Currently, there are 200 students who did not pass all of the exam on the first attempt. In addition, there are 50 students who did not pass on the second attempt. In the long run, how many students will be exempted from the course by passing the exams? How many of the 250 students will be required to take the computer course?