Based on a study, only 5% of male basketball, baseball, and football players go on to play at the college level. Of these, only 1.7% enters major league professional sports. Also, the probability that a high school athlete reaching professional play without college is 0.01%. What is the probability that a student that does not compete in college plays professionally? What is the probability that a high school athlete chosen at random plays professional sports?

After taking college placement tests, freshmen sometimes are required to repeat high school work. Such work is called "remediation" and does not count toward a college degree. About 11% of college freshmen have to take a remedial course (in CSU system about 40% has to take remediation in Language Arts) in reading. Suppose you select two freshmen at random and check to see if they have to take remedial reading.

a) Find the probability that both freshmen have to take remedial reading.

b) What is the probability at least one of the freshmen have to take remedial reading?

c) Given that the first freshman is not in remedial reading, what is the probability that the second freshmen is in remedial reading?

For men, binge drinking is defined as having five or more drinks in a row, and for women as having four or more drinks in a row. According to a study by the Harvard School of Public Health, 4% of college students engage in binge drinking, 37% drink moderately, and 19% abstain entirely. Another study finds that among binge drinkers aged 21 to 34, 17% have been involved in an alcohol-related automobile accident, while among non-bingers only 9% have been involved.

What is the probability that a randomly selected college student will be a binge drinker who has had an alcohol-related accident?

What is the probability that the student selected is a binge drinker given they had an alcohol-related accident?

A recent Maryland highway safety study found that in 77% of all accidents the driver was wearing a seatbelt. Accident reports indicated that 92% of those drivers escaped serious injury but only 63% of the non-belted drivers were so fortunate. What is the probability that a driver who was seriously injured was not wearing a seatbelt?