Question 1

A sample of 400 students was taken from some university. In the sample, 190 students were males. Among the male students 40 were science students, 70 were information technology students, and 50 were engineering students. Among the female students, 50 were information technology students, 30 were engineering students, and 70 were education students.

Gender	Faculty				Total
	Science (S)	Info. Tech. (T)	Engineering (E)	Education (D)	
Male (M)					
Female (F)					
Total					

Complete the above crosstabulation and answer the following questions.

1) A student was selected at random, what is the probability the student is a female?
2) A student was selected at random, what is the probability the student is an engineering student?
3) A student was selected at random, what is the probability the student is a male science student?
4) A student was selected at random, what is the probability the student is a female or a science student?
5) An information technology student was selected, what is the probability that the student is female?
6) A male student was selected, what is the probability that the student is an education student?
7) Using the above answers and the definition of independence, show if gender and faculty are independent?
8) Two students were selected at random, what is the probability that both are education students?

Question 2

An insurance company is studying the probability of accidents over many years in a certain city during May. It was noted that the probability it will rain in May is 30%. Moreover, it was noted that on rainy days the probability of car accidents is 60% while on dry days (days without rain) the probability of car accidents is 30%. If an accident happened, what is the probability it was a dry day?