Question # 1 (15 marks)

A standard admission test was given at three locations. One thousand students took the test at location Toronto East, 700 students at location Toronto West, and 300 students at location Toronto Central. The percentages of students from locations Toronto East, Toronto West, and Toronto Central, who passed the test were 70%, 68%, and 77% respectively. One student is selected at random from among those who took the test. Find the following probabilities:

a. What is the probability that the selected student passed the test?
b. If the selected student passed the test, what is the probability that the student took the test at location Toronto East?
c. What is the probability that the selected student took the test at location Toronto Central and failed?
d. What is the probability that the selected student failed the test?
e. If the selected student failed the test, what is the probability that the student took the test at location Toronto West?

Question # 2 (15 marks)

Daffodils Insurance Company has created a new policy for the coming year. Before offering potential customers the new rates, Daffodils Insurance Company has collected the following data on the gender and marital status of 400 current customers:

- - 50 customers are male and single
- - 31.25% customers are single
- - 235 customers are male
- - 60 customers are male and divorced
- - 43.75% are married customers
- - 41.25% are female customers

Based on the above information you are to fill in the contingency table below and you are to answer the following questions if a customer is selected at random:

	Marital Status			
Gender	Single	Married	Divorced	
Male				
Female				

a) Find the probability that the customer selected is a married female
b) Find the probability that the customer selected is not single
c) Find the probability that the customer selected is female or divorced
d) Find the proportion that the customer selected is married if the customer is male
e) Is marital status independent of gender? Explain using probabilities.