Name: _____ **Date:** _____

1) Pamela has collected data on the number of students in the sophomore class who play a sport and/or play a musical instrument.

		Plays a sport	
		Yes	No
Plays an	Yes	47	38
instrument	No	51	67

a. Complete the table of the joint and marginal relative frequencies. Round to the nearest hundredth where appropriate.

		Plays a sport		
		Yes	No	Total
Plays an	Yes			
instrument	No			
	Total			

b. Given that a student plays an instrument, what is the probability that the student also plays a sport? Round your answer to the nearest hundredth.

c. Given that a student plays a sport what is the probability that the student also plays an instrument? Round your answer to the nearedt hundredth.

2) The claims handlers at a car insurance company help customers with insurance issues when there has been an accident, so their customer service skills are very important. The claims handlers at the Hillgrove Insurance Company are divided into three teams. For one month, a customer satisfaction survey was given for each team. The results of the surveys are shown below.

	Satisfied	Dissatisfied
Team 1	20	8
Team 2	34	12
Team 3	34	10

a. Fill in the table of the joint and marginal relative frequencies. Round to the nearest hundredth where appropriate.

	Satisfied	Dissatisfied	Total
Team 1			
Team 2			
Team 3			
Total			

b. Find the probability that a customer will be satisfied after working with each team. Round to the nearest hundredth if appropriate.

c. Determine which team has the highest rate of customer satisfaction.

3) A town planning committee is considering a new system for public transit. Residents of the town were randomly selected to answer two questions: "Do you work within 5 miles of your home?" and "Would you use the new system to get to work, if it were available?" The results are shown here:

		Work less than 5 miles from home?	
		Yes	No
Use new system?	Yes	24	32
	No	44	20

a. Complete the table of JRF and MRF. Round to the nearest hundredth where appropriate.

		Work less than 5 miles from home?		
		Yes	No	Total
Use new system?	Yes			
	No			
	Total			

b. If residents work less than 5 miles from home, what is the probability that they would use the new system? Round your answer.

c. If residents are willing to use the new system, what is the probability that they don't work less than 5 miles from home? Round your answer.

4) A group of students were polled to find out how many were planning to major in a scientific field of study in college. The results of the poll are shown in the two-way table.

		Majoring in a science field	
		Yes	No
Class	Junior	150	210
	Senior	112	200

Which of the following statements is true:
   a) Three hundred and sixty students were polled in all.
   b) A student in the senior class is more likely to be planning on a scientific major than a nonscientific major.
   c) A student planning on a scientific major is more likely to be a junior than a senior.
   d) More seniors than juniors plan to enter a scientific field of study.

Use the following table of people going to a carnival for #5 &6.

	Bought tickets	Did not buy tickets
Children	0.125	0.1
Teenagers	0.725	0.05

5) Find the MRF for the table:

	Bought tickets	Did not buy	Total
Children			
Teenagers			
Total			

6) If the data represents 80 teenagers and children altogether, how many children will have bought a ticket book at the entrance?