Marginal and Conditional Distribution Worksheet Name:_____

Smoking and Education

A

200 adults shopping at a supermarket were asked about the highest level of education they had completed and whether or not they smoke cigarettes. Results are summarized in the table.

	Smoker	Non-smoker	Total
High school	32	61	93
2 yr college	5	17	22
4+ yr college	13	72	85
Total	50	150	200

1. Discuss the W's.

2. Identify the variables.

3. a) What percent of the shoppers were smokers with only high school educations? _____

   b) What percent of the shoppers with only high school educations were smokers? _____

   c) What percent of the smokers had only high school educations? _____

B

Has the percentage of young girls drinking milk changed over time? The following table is consistent with the results from "Beverage Choices of Young Females: Changes and Impact on Nutrient Intakes" (Shanthy A. Bowman, *Journal of the American Dietetic Association*, *102*(9), pp. 1234-1239):

		Nationwide Food Survey Years			
		1987-1988	1989-1991	1994-1996	**Total**
Drinks Fluid Milk	Yes	354	502	366	**1222**
	No	226	335	366	**927**
	Total	**580**	**837**	**732**	**2149**

1. Find the following:
   a. What percent of the young girls reported that they drink milk? _____
   b. What percent of the young girls were in the 1989-1991 survey? _____
   c. What percent of the young girls who reported that they drink milk were in the 1989-1991 survey? _____
   d. What percent of the young girls in 1989-1991 reported that they drink milk? _____

2. What is the marginal distribution of milk consumption?

C

To determine if people's preference in dogs had changed in the recent years, organizers of a local dog show asked people who attended the show to indicate which breed was their favorite. This information was compiled by dog breed and gender of the people who responded. The table summarizes the responses.

	Female	Male	Total
Yorkshire Terrier	73	59	**132**
Dachshund	49	47	**96**
Golden Retriever	58	33	**91**
Labrador	37	41	**78**
Dalmatian	45	28	**73**
Other breeds	86	67	**153**
Total	**348**	**275**	**623**

1. Identify the variables and tell whether each is categorical or quantitative.

2. Which of the W's are unknown for these data?

3. Find each percent.
   a. What percent of the responses were from males who favor Labradors? _____
   b. What percent of the male responses favor Labradors? _____
   c. What percent of the people who choose Labradors were males? _____

4. What is the marginal distribution of breeds?