

1. The Ritz-Carlton Hotel used a customer opinion questionnaire to obtain performance data about its dining and entertainment services (The Ritz-Carlton Hotel, Naples, Florida, February 2006). Customers were asked to rate six factors: Welcome, Service, Food, Menu Appeal, Atmosphere, and Overall Experience. Data were recorded for each factor with 1 for Fair, 2 for Average, 3 for Good, and 4 for Excellent.

- a. The customer responses provided data for six variables. Are the variables categorical or quantitative? [6]
- b. What measurement scale is used? [6]

2. State whether each of the following variables is categorical or quantitative and indicate its measurement scale. [10]

- a. Annual sales
- b. Soft drink size (small, medium, large)
- c. Employee classification (GS1 through GS18)
- d. Earnings per share
- e. Method of payment (cash, check, credit card)

3. The Hawaii Visitors Bureau collects data on visitors to Hawaii. The following questions were among 16 asked in a questionnaire handed out to passengers during incoming airline flights in June 2003.

- This trip to Hawaii is my: 1st, 2nd, 3rd, 4th, etc.
- The primary reason for this trip is: (10 categories including vacation, convention, honeymoon)
- Where I plan to stay: (11 categories including hotel, apartment, relatives, camping)
- Total days in Hawaii

- a. What is the population being studied? [1]
- b. Comment on each of the four questions in terms of whether it will provide categorical or quantitative data. [4]

4. Refer to the following table.

Car	Size	Cylinders	City MPG	Highway MPG	Fuel
Audi A8	Large	12	13	19	Premium
BMW 328Xi	Compact	6	17	25	Premium
Cadillac CTS	Midsized	6	16	25	Regular
Chrysler 300	Large	8	13	18	Premium
Ford Focus	Compact	4	24	33	Regular
Hyundai Elantra	Midsized	4	25	33	Regular
Jeep Grand Cherokee	Midsized	6	17	26	Diesel
Pontiac G6	Compact	6	15	22	Regular
Toyota Camry	Midsized	4	21	31	Regular
Volkswagen Jetta	Compact	5	21	29	Regular

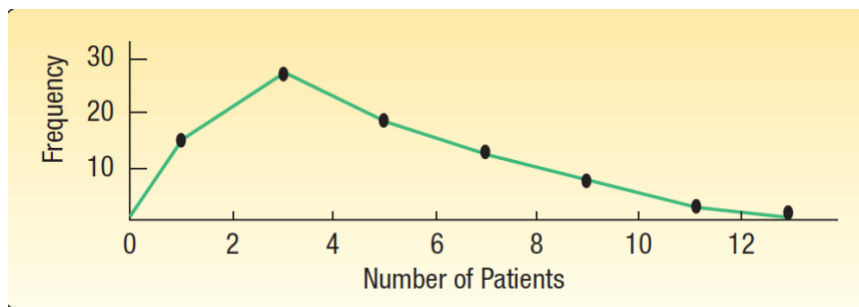
- a. What is the average miles per gallon for city driving? [1]
- b. On average, how much higher is the miles per gallon for highway driving as compared to city driving? [1]
- c. What percentage of the cars have four-cylinder engines? [1]
- d. What percentage of the cars use regular fuel? [1]

5. Fill in the following table on number of hours slept in a study on 100 individuals:

Class Interval	frequency	Relative Frequency	Cumulative Frequency (less than type)	Cumulative relative frequency (less than type)
3-5	15			
5-7	40		B	C
7-9	30	A		
9-11	15			

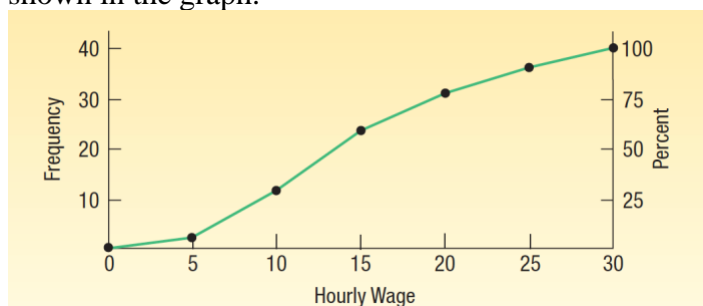
Find the value of A, B, and C and comment on each occasion. [6]

6. The following chart shows the number of patients admitted daily to Memorial Hospital through the emergency room.



- What is the midpoint of the 2 up to 4 class? [1]
- How many days were 2 up to 4 patients admitted? [1]
- What is the class interval? [1]
- What is this chart called? [1]

7. The following cumulative frequency and the cumulative relative frequency polygon for the distribution of hourly wages of a sample of certified welders in the Atlanta, Georgia, area is shown in the graph.



- How many welders were studied? [1]
- What is the class interval? [1]
- About how many welders earn less than \$10.00 per hour? [1]
- About 75% of the welders make less than what amount? [1]
- Ten of the welders studied made less than what amount? [1]
- What percent of the welders make less than \$20.00 per hour? [1]