Frequency Distribution Worksheet

Probability & Statistics

1. The number of hours taken by transmission mechanics to remove, repair, and replace transmissions in one of the Transmission Fix-It stores one day last week are recorded as follows:

2.9	3.4	5.4	3.6	2.7
4.4	5.4	3.2	4.6	3.3
2.3	3.3	6.7	2.2	4.4
5.5	3.3	6.7	8.7	4.1

   Construct a **frequency distribution** with **5** intervals/**classes**

2. Here are the ages of 50 members of a county social service program:

81	53	67	60	80	64	56	54	91	61
66	88	67	65	52	72	74	65	73	69
43	54	76	70	97	68	82	75	79	60
39	87	76	97	86	45	60	43	65	76
92	72	82	80	70	65	50	58	70	56

7-Interval S

Use this data to construct **relative frequency distributions** using 7 equal intervals
. State policies on social service programs require approximately 40 percent of the program participants to be older than 50.

a. Is the program in compliance with the policy?

b. Does your 7-interval relative frequency distribution help you answer part a

c. Suppose the director of social services wanted to know the proportion of program participants between 45-80 years old. Could you estimate the answer better for her better with a 7- or a 13-interval relative frequency distribution

3. High Performance Bicycle Products Company in Chapel Hill, NC sampled its shipping records for a certain day with these results:

| 4 | 12 | 8 | 14 | 11 | 6 | 7 | 13 | 13 | 11 |
| 11 | 20 | 5 | 19 | 10 | 15 | 24 | 7 | 29 | 6 |

Construct a relative frequency distribution of the data. Use 5 equal class widths that will include all of the data.

a. What is the class width?

b. What statement can you make about the effectiveness of order processing from the frequency distribution?

c. If the company wants to insure that half of its deliveries are made in 10 days or less, can you determine from the frequency distribution whether they have reached this goal?

5. The president of Ocean Airlines is trying to estimate when the Civil Aeronautics Board (CAB) is most likely to rule on the company's application for a new route between Charlotte and Nashville. Assistants to the president have assembled the following waiting times for applications filed during the past year. The data are given in days from the date of application until a CAB ruling:

32	38	26	29	32	41	28	31	45	36
45	35	40	30	31	40	27	33	28	30
30	41	39	38	33	35	31	36	37	32
23	45	39	37	38	36	33	35	42	38
34	22	37	43	52	32	35	30	46	36

a. Construct a relative frequency distribution using 10 intervals. Which interval occurs most often?

b. Construct a relative frequency distribution using 5 intervals. Which interval occurs most often?