Reading: *Introduction to the Practice of Statistics,* by Moore & McCabe

Problem 1: (6pts) Data from a medical study contain values of many variables for each of the people who were the subjects of the study. Which of the following variables are categorical and which are quantitative?

a. Gender (female or male)

b. Age (years)

c. Race (Asian, black, white, or other)

d. Smoker (yes or no)

e. Systolic blood pressure (millimeters of mercury)

f. Level of calcium in the blood (micrograms per milliliter)

Problem 2: **(a) (10pts)** Make a histogram of the mean annual temperatures at Pasadena for the years 1951 – 2000 (data below). Describe the distribution of temperatures.

(b) (10pts) Make a time plot (Temperature versus Year) and describe the important fact that the histogram missed.

Data:

Mean Temperature in Pasadena, CA	
year	Temp
1951	62.27
1952	61.59
1953	62.64
1954	62.88
1955	61.75
1956	62.93
1957	63.72
1958	65.02
1959	65.69
1960	64.48

1961	64.12
1962	62.82
1963	63.71
1964	62.76
1965	63.03
1966	64.25
1967	64.36
1968	64.15
1969	63.51
1970	64.08
1971	63.59
1972	64.53
1973	63.46
1974	63.93
1975	62.36
1976	64.23
1977	64.47
1978	64.21
1979	63.76
1980	65.02
1981	65.8
1982	63.5
1983	64.19
1984	66.06
1985	64.44
1986	65.31
1987	64.58
1988	65.22
1989	64.53
1990	64.96
1991	65.6
1992	66.07
1993	65.16
1994	64.63
1995	65.43
1996	65.76
1997	66.72
1998	64.12
1999	64.85
2000	66.25

Problem 3: **(a) (6pts)** Last year a small accounting firm paid each of its five clerks $35,000, two junior accountants $68,000 each and the firm's owner $200,000. What is the mean salary paid at this firm? How many of the employees earn less than the mean? What is the median salary?

(b) (4pts) This year, the firm in (a) gives no raises to the clerks and junior accountants, while the owner's take increases to $355,000. How does this change affect the mean? How does it affect the median?

Problem 4: The following table shows the frequency distribution for the number of hours per week spent browsing the Web by a sample of 20 people:

Number of people	Weekly browsing time **per person**(hours)	Deviation	Deviation^2
1	2		
2	3		
4	5		
6	6		
5	7		
1	9		
1	12		

Find:

(a) (4pts) The **<u>total</u>** browsing time <u>by all 20</u> people (hint: don't forget to take into account the number of people in each browsing time block).

(b) (4pts) The <u>average</u> browsing time per person in this whole sample.

(c) (6pts) Complete the table above and determine the Standard Deviation of the browsing times.