Core I Homework week of 8/24/2009

1) The table below gives the percentiles of recent SAT mathematics scores for national college-bound seniors. The highest possible score is 800 and the lowest possible score is 200. Only scores that are multiples of 50 are shown in the table, but all multiples of 10 from 200 to 800 are possible.

College-Bound Seniors

SAT Math Score	Percentile	SAT Math Score	Percentile	SAT Math Score	Percentile
750	98	550	61	350	7
700	94	500	45	300	2
650	87	450	28	250	1
600	76	400	15	200	0

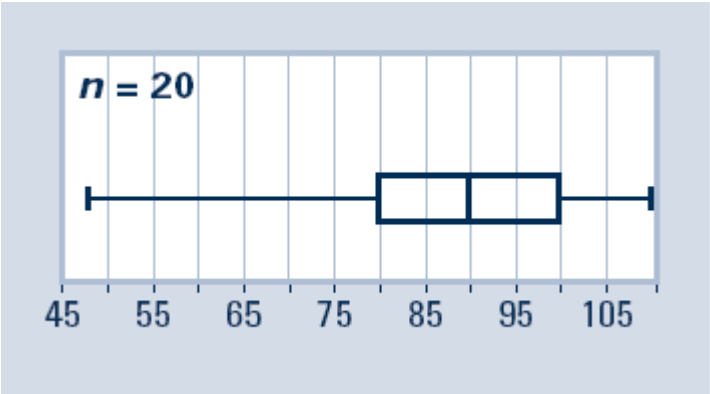
a. What percentage of students get a score of 650 or lower on the mathematics part of the SAT?

b. What is the lowest score you could get on the mathematics part of the SAT and still be in the top 39% of those who take the test.

c. Estimate what score you would have to get to be in the top half of the students who take this test.

d. Estimate the 25th and 75th percentiles and the interquartile range (IQR). In a sentence or two, explain what this interquartile range means.

2) Consider the box plot at the right.



a. What do you suppose the "n = 20" on the plot means?

b. How many values are between 50 and 80? Between 80 and 100? Greater than 80?

c. Is it possible for the box plot to represent the values below? Explain your reasoning.

50, 60, 60, 75, 80, 80 82, 83, 85, 90, 90, 91, 91, 94, 95, 95, 98, 100, 106, 110

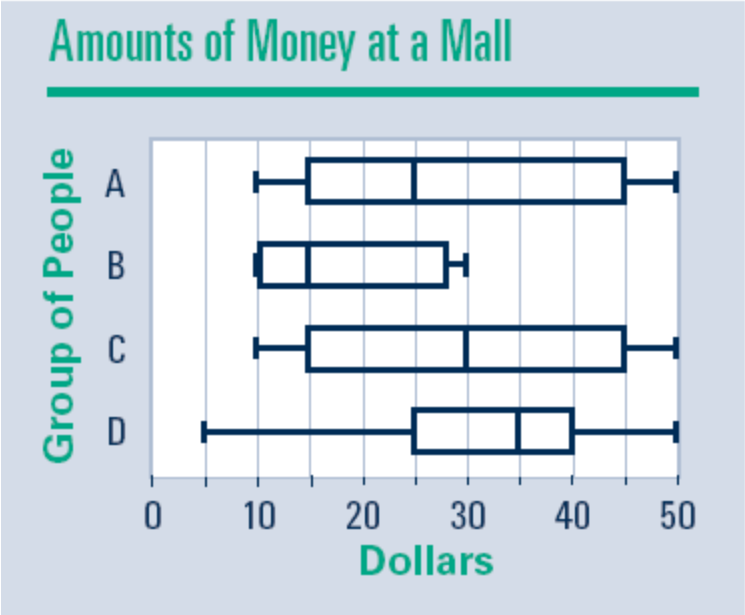
3) These box plots below represent the amounts of money (in dollars) carried by all of the people surveyed in four different places at a mall.

a) Which group of people has the smallest range in the amounts of money? The largest?

b) Which group of people has the smallest interquartile range (IQR) in the amounts of money? The largest?

c) Which group of people has the largest median amount of money?

d) Which group of people has the most symmetric distribution of amounts of money?

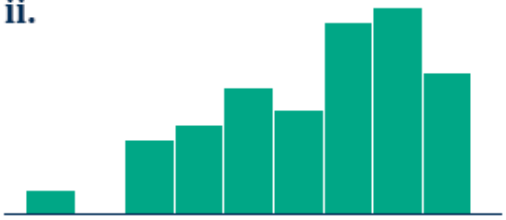


e) Which group of people do you think might be high school students standing in line for tickets at a movie theater on Saturday night? Explain your reasoning.

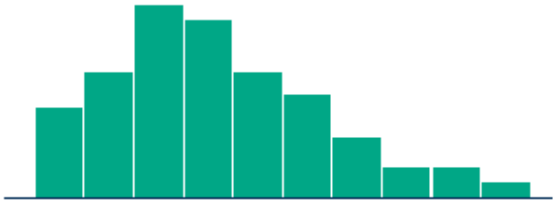
f) Match each "Amount of Money" box plot with the histogram that seems the most appropriate.

i.

ii.



iii.



iv.