$\qquad$ Date: $\qquad$

1. Identify the Five-Number Summary number for the data of Johnny's test scores and draw the Box \& Whisker plot.
$92,96,97,83,92,58,93,88,77,48,65,80,71$

What is the range? $\qquad$ IQR? $\qquad$ MAD? $\qquad$
Are there any outliers in the data set?
2. The table gives the low temperatures in Chicago on eight randomly selected winter days. Which measure of central tendency (mean or med) probably gives the LEAST ACCURATE prediction of a "typical" low temperature on a Chicago winter day?

| Chicago Lows |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 17 | 25 | 28 | 12 | 16 | 55 | 18 | 22 |

3. Describe the shape of the distribution. Estimate the mean, median and upper and lower quartiles for the data.

Histogram

4. Construct a frequency table from the following information:

A survey of 200 9th and 10th graders was given to determine what their favorite subject was. 72 said Math (50 which were freshmen), 38 said Social Studies (20 which were sophomores), and 40 freshmen and 50 sophomores said PE was their favorite.

|  |  |  |  | Total |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  |  |  |  |  |
| Total |  |  |  |  |

Based on your table above, answer the following questions:
a) What are the marginal relative frequencies? $\qquad$
b) What are the joint relative frequencies? $\qquad$
c) What is the marginal probability that a student surveyed is a freshman? $\qquad$
d) What is the marginal probability that a student surveyed likes Math? $\qquad$
e) If a student likes Math, what is the conditional probability that they are a freshman? $\qquad$

| What you need to know \& be able to do | Things to remember | Problem Problem |
| :---: | :---: | :---: |
| Identify the measures of central tendency. | - Mean <br> - Median <br> - Mode | 1. $36,39,58,42,106,39,48,45$ 2. $50,55,60,58,62,57,68,51,63$ |
| Identify the measures of spread. | - Q1 <br> - Q3 <br> - IQR <br> - Minimum <br> - Maximum <br> - Range <br> - MAD | 3. (Use the same \#s from 1) 4 4. (Use the same \#s from 2) |
| Construct a box-and-whisker plot. | - First dot: Min <br> - First Line: Q1 <br> - Middle Line: Median <br> - Third Line: Q3 <br> - Last dot: Max <br> - Outlier: $\begin{aligned} & \text { Q1 - } 1.5(\mathrm{IQR}) \\ & \text { Q3 }+1.5(\mathrm{IQR}) \end{aligned}$ | 5. Using the data from \#1 \& 3, construct a box and whisker plot. <br> 6. Are there any outliers? Show your work! |

