Honors Coordinate Algebra Name _____

1. Felipe surveyed students at his school. He found that 78 students own a cell phone and 57 of those students own an Ipad. There are 13 students that do not own a cell phone, but own an Ipad. Nine students do not own either device.

a. Construct a two-way table summarizing the data.

	Ipad Yes	Ipad No	
Cell Yes	57	21	78
Cell No	13	9	22
	70	30	100

b. Construct a two-way relative frequency table for the data.

	57%	21%	78%
	13%	9%	22%
	70%	30%	100%

2. The two-way table shows the number of students that do or do not do chores at home and whether they receive an allowance or not.

	Allowance	No Allowance	
Do Chores	13	3	16
Do Not Do Chores	5	4	9
	18	7	25

a. How many total students do chores? 16

b. What is the relative frequency of students that do chores and get an allowance to the number of students that do chores? Round to the nearest hundredth if necessary. $13/16 = .8125$ 81.25%

c. What is the relative frequency of students that do not do chores nor get an allowance to the total number of students? Round to the nearest hundredth if necessary.

$4/25 = 0.16$ 16%

3. The two-way table below shows the number of students with each hair color and eye color. Make up three questions. One for each type of frequencies: Joint, Conditional, and Marginal Free Response

Eye Color	Hair Color: Black	Brown	Red	Blond	Total
Brown	7	12	3	1	23
Blue	2	8	2	9	21
Hazel	2	5	1	1	9
Green	1	3	1	2	7
Total	12	28	7	13	60

1) Joint -

2) Conditional -

3) Marginal -

4. ***80*** students each study one Science. The table shows some information about these students

a. Complete the table

	Biology	Chemistry	Physics	Total
Female	18	15	14	47
Male	8	6	19	33
Total	26	21	33	80

M b. What is the percentage that the student studies Physics? 41.25% 33/80

J c. What is the percentage that the student is male and does not study biology? 31.25% 25/80

J d. What is the percentage that the student is female and studies Chemistry? 18.75% 15/80

C e. What is the percentage of Females taking Biology? 69.2% 18/26

M f. What is the percentage that the student does not study Biology? 67.5% 54/80

e. Place a *J*-Joint, *C*-Conditional, or *M*-Marginal beside b-f to indicate what type of relative frequency the answer is.

5. 55, 47, 38, 66, 56, 64, 44, 63, 39

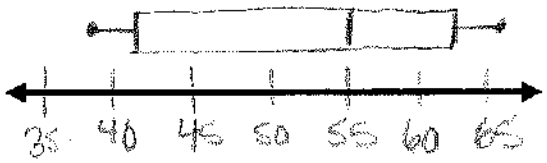
38 39 44 47 55 56 63 64 66

Med = 55

$Q_1 = 41.5$

$Q_3 = 63.5$

a. Create a Box Plot for the data.



b. State the Outlier Range. IQR = 63.5 − 41.5 = 22

$Q_1 - 1.5 \times IQR$ 41.5 − 1.5(22) = 8.5

$Q_3 + 1.5 \times IQR$ 63.5 + 1.5(22) = 96.5

L - 8.5
U - 96.5

c. State the Mean Absolute Deviation MAD.

$\bar{x} = 52.4$

14.4, 13.4, 8.4, 5.4, 2.6, 3.6, 10.6, 12.6, 13.6 = 84.6/9

MAD = 9.4

6. The accompanying box plots can be used to compare the annual incomes of three professions.

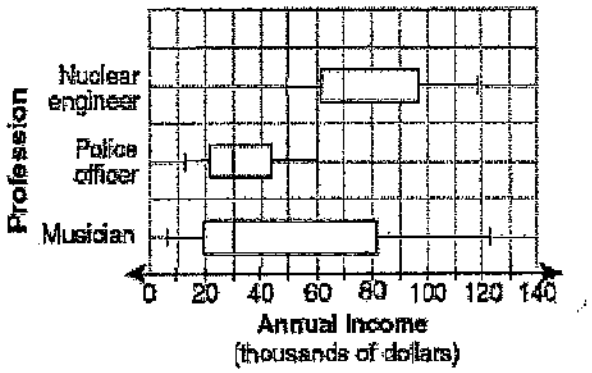
Based on the box plots which statement is true?

a. The median income for nuclear engineers is greater than the income of all musicians.

(b.) The median income for police officers and musicians is the same.

c. All nuclear engineers earn more than all police officers.

d. A musician will eventually earn more than a police officer.



7. Explain which ***Center*** and ***Spread*** would be best to represent data if it is skewed?

Median & IQR

8. Charlene is looking at all the 8th scores from the Math CRCT's from the state of Georgia. She uses a computer to calculate the MAD and the result is 28. What can she conclude about the data?