

Name \_\_\_\_\_

Date \_\_\_\_\_

	Bacon	Sausage	Ham
Waffles	48	13	31
Pancakes	11	12	18

$= 133$

1. In the table below, record the joint and marginal relative frequencies. Round your answer to the nearest hundredth.

	Bacon	Sausage	Ham	Totals
Waffles	$\frac{48}{133} = 0.36$	$\frac{13}{133} = 0.10$	$\frac{31}{133} = 0.23$	0.69
Pancakes	$\frac{11}{133} = 0.08$	$\frac{12}{133} = 0.09$	$\frac{18}{133} = 0.14$	0.31
Totals	0.44	0.19	0.37	1

2. Is it more likely that you had ham given that you had waffles or given that you had pancakes?

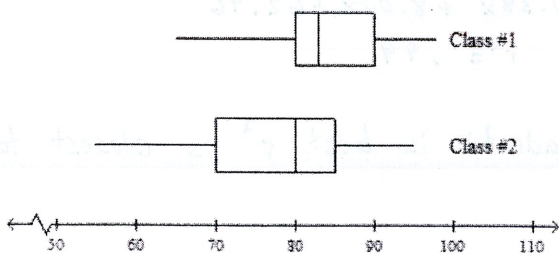
Given Waffles:  $\frac{.23}{.69} \approx .33$       Given Pancakes:  $\frac{.14}{.31} \approx .45$

*It is more likely given that you had pancakes.*

3. If you surveyed 350 people, how many of them would you expect to have been waffle-eaters who had bacon?

$0.36 (350) = 126 \text{ people}$

Test Grades



Which class had the smaller:

- IQR Class 1 ?
- Median Class 2 ?
- Spread in the 2nd 25% Class 1 ?
- Overall deviation Class 1 ?

For questions 5-8, use the list of test scores given here:

92, 61, 82, 90, 87, 78, 76, 90, 85, 89

5. What are the mean, median, and mode and IQR of the data?

Mean = 83      Median = 86      Mode = 90      IQR = 90-78 = 12

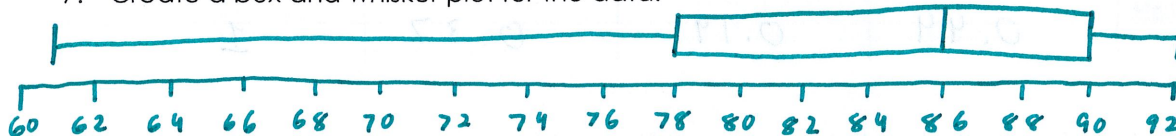
6. Find the Mean Absolute Deviation of the scores.

1)  $\bar{x} = 83$

2) 9, 22, 1, 7, 4, 5, 7, 7, 2, 6

3)  $\frac{70}{10} = 7$

7. Create a box-and whisker plot for the data.



8. Are there any outliers? Show all your calculations.

$Q_1 - 1.5(IQR) = 78 - 1.5(12) = 60$

$Q_3 + 1.5(IQR) = 90 + 1.5(12) = 108$

No outliers

9. The following table shows a person study hours versus their test scores.

Hours studied (x)	2	5	1	0	4	2	3
Grade on test (y)	77	92	70	63	90	75	84

Would the data be best modelled as a linear, quadratic, or exponential function? Find the equations for each, then justify your answer.

Linear:  $y = 6.09x + 63.93$   
 $r^2 = .98$

Quadratic:  $y = -0.38x^2 + 8.00x + 62.46$   
 $r^2 = .99$

Exponential:  $y = 64.57(1.08)^x$   $r^2 = .97$       Quadratic is best.  $r^2$  is closest to 1.

Additional Topics for Review:

- Correlation vs. Causation
- Analyzing results (tell me what your data actually means)