

MATH 209 QUIZ 6 - Version B

March 30, 2015

Name: ANSWERS

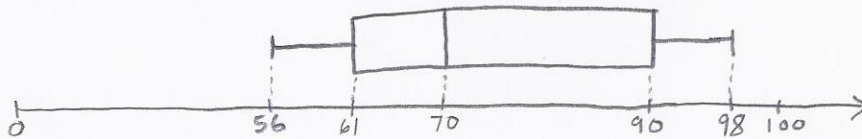
Instructions: Use your own scrap paper. Write your answers in the space provided.

1. The scores that 7 students earned on a math exam are as follows: 56, 61, 98, 61, 90, 70, 80. Find:

(i) The mean: 73.71 (ii) The mode: 61

(iii) The median: 70 (iv) The standard deviation: 16.05

(b) Draw a box-plot of the data. Include the median in each half when computing the quartiles.

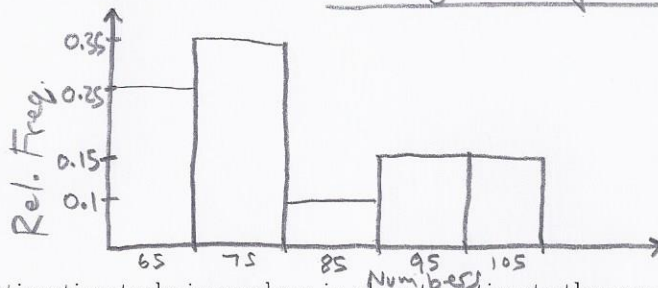


2. Consider the list of 20 numbers: 67, 72, 61, 63, 98, 85, 77, 63, 72, 87, 94, 71, 60, 79, 71, 103, 102, 77, 90, 105.

(a) Using bins of size 10, fill out the frequency table below.

Bin	Frequency	Relative Freq.	Cum. Freq.
[60,70)	5	$\frac{5}{20} = 0.25 = 25\%$	5
[70,80)	7	$\frac{7}{20} = 0.35 = 35\%$	12
[80,90)	2	$\frac{2}{10} = 0.1 = 10\%$	14
[90,100)	3	$\frac{3}{20} = 0.15 = 15\%$	17
[100,110)	3	0.15 = 15%	20
Total	20	1 = 100%	20

(b) Draw a histogram of the data: Histogram of the 20 numbers



77.15 acceptable.

(c) Use the estimation techniques done in class to estimate the mean 81, median 75.72 and standard deviation 14.3 for the data set. FYI: actual mean = 79.85, median = 77, stdev = 14.77

Bonus: For bivariate data sets, define the covariance of the variables x and y :

$$c_{xy} = \frac{(x_1 - \bar{x})(y_1 - \bar{y}) + (x_2 - \bar{x})(y_2 - \bar{y}) + \dots + (x_n - \bar{x})(y_n - \bar{y})}{n - 1}$$

$n > 1$ is the # of data points.