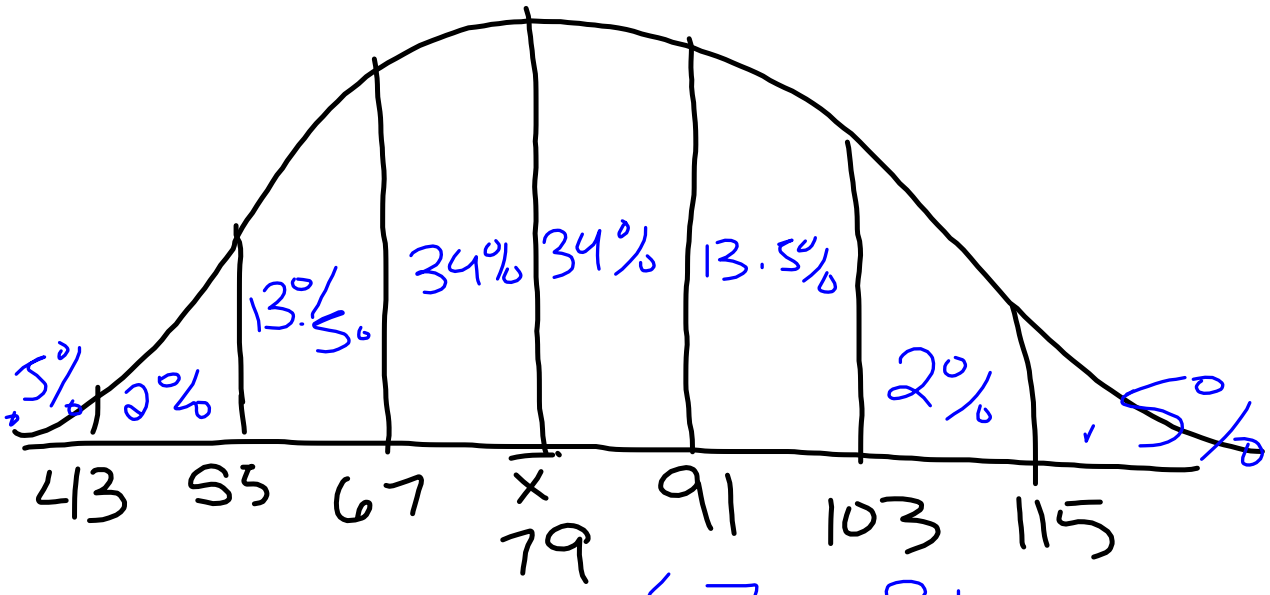
Algebra 1B

7-8 Standard deviation and Normal Distribution HOMEWORK

1. The scores from a statistics test were **{99, 60, 82, 78, 93, 71, 68, 86, 80, 95, 72, 64}**

(a) Calculate the mean and standard deviation for the class. $\mu =$ 79 $\sigma =$ 12

(b) Draw and label the normal distribution curve.



(c) 68% of the students have a test score between 67 and 91.

(d) 95% of the students have a test score between 55 and 103.

(e) What percentage of the students scored less than a 79? 50%

(f) What percent of the students scored between a 55 and 91? 81.5%

Algebra 1B

Unit 7-9 Review #1

1. Find the range of the following data:

72, 89, 41, 89, 73, 72, 91

max - min

91 - 41

50

2. If each member of the data set {2, 2, 3, 5, 8} is multiplied by 2, which changes will take place in the mean, median, and mode of the data?

1) The mean, median, and mode will be multiplied by 2.
2) The median will remain the same; the mean and mode will be multiplied by 2.
3) The mode will remain the same; the mean and median will be multiplied by 2.
4) The mean will remain the same; the median and mode will be multiplied by 2.

mean = 4
median = 3
mode = 2

{4, 4, 6, 10, 16}
mean = 8
median = 6
mode = 4

3. The heights, in inches, of 10 high school varsity basketball players are 78, 79, 79, 72, 75, 71, 74, 74, 83, and 71. Find the interquartile range of this data set.

Plug data into Calc to get Q1 & Q3

Q3 - Q1
79 - 72
7

4. What is the median of the set of data shown in the table below?

1) 15
2) 10.5
3) 5.5
4) 4

Measure (x_i)	Frequency (f_i)
4	15
5	8
6	13
7	10

value 4 "15 times"
value 5 "8 times"

46 values

Put all 46 values in "List"

5. Kelsey scored the following points in her first six basketball games: 22, 14, 19, 22, 8, and 17. What is the relationship between the measures of central tendency of these data?

1) mode > median > mean
2) median > mode > mean
3) mean > median > mode
4) mode > mean > median

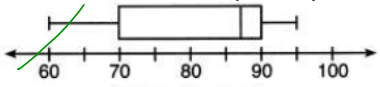
mean = 17
median = 18
mode = 22

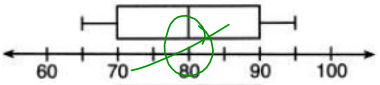
mode med mean
22 > 18 > 17

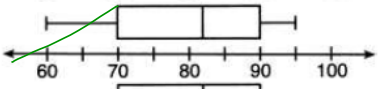
6. The students in Ms. Glenn's math class earned the grades shown below.

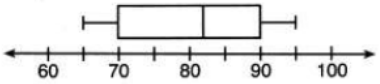
65, 70, 70, 80, 80, 82, 88, 88, 90, 90, 95

Which box-and-whisker plot represents these data?

1)


2)


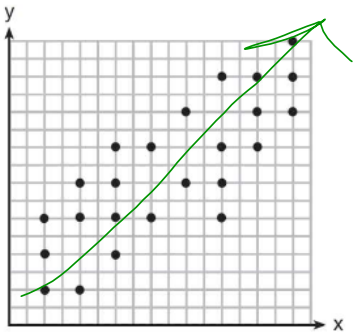
3)


4)


min = 65
Q_1 = 70
med = 82
Q_3 = 90
max = 95

7. The scatter plot shown below represents a relationship between x and y.

This type of relationship is
1) a positive correlation
2) a negative correlation
3) a zero correlation
4) not able to be determined



8. For a class of students, which data set could be classified as qualitative?

1) political opinions
2) heights
3) weights
4) ages

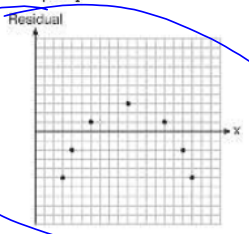
↳ descriptor

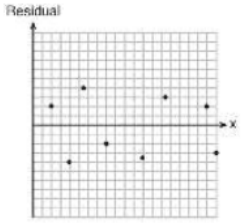
9. Which statistic would indicate that a linear function would *not* be a good fit to model a data set?

Curved Pattern
We would not use Linear

1) $r = -0.93$

2) $r = 1$

3) 

4) 

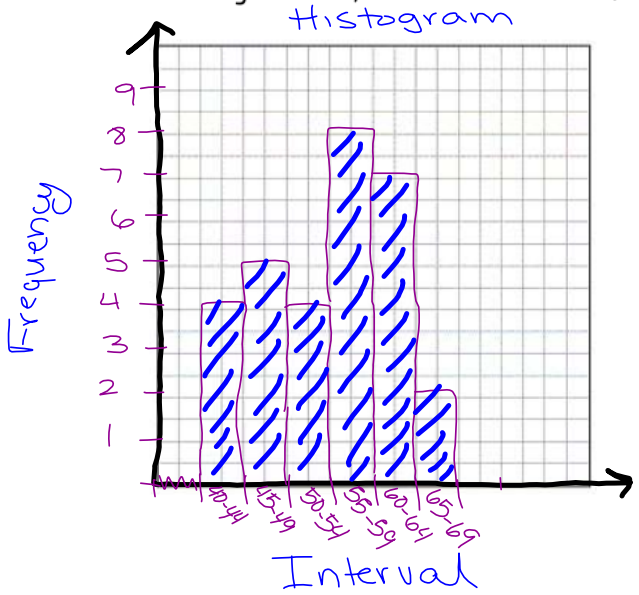
9. The Fahrenheit temperature readings on 30 April mornings in Stormville, New York, are shown below.

41°, 58°, 61°, 54°, 49°, 46°, 52°, 58°, 67°, 43°,
47°, 60°, 52°, 58°, 48°, 44°, 59°, 66°, 62°, 55°,
44°, 49°, 62°, 61°, 59°, 54°, 57°, 58°, 63°, 60°

Using the data, complete the frequency table below.

Interval	Tally	Frequency
40-44	IIII	4
45-49	HH	5
50-54	IIII	4
55-59	HH III	8
60-64	HH II	7
65-69	II	2

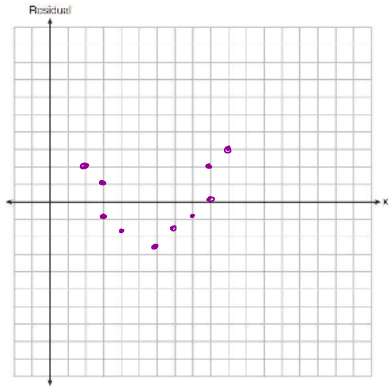
On the grid below, construct and label a frequency histogram based on the table.



10. The table below represents the residuals for a line of best fit.

x	2	3	3	4	6	7	8	9	9	10
Residual	2	1	−1	−2	−3	−2	−1	2	0	3

Plot these residuals on the set of axes below.



Using the plot, assess the fit of the line for these residuals and justify your answer.

The Fit would not be linear because of The curved pattern