Name: _____ Date: _____

Frequency Histograms
Algebra 1

An effective way to learn how to organize data is by using a frequency table and a frequency histogram. We have used a frequency table in previous lessons but we have not constructed frequency histograms. A **frequency histogram** is a bar graph that helps you visualize the information presented in a frequency table.

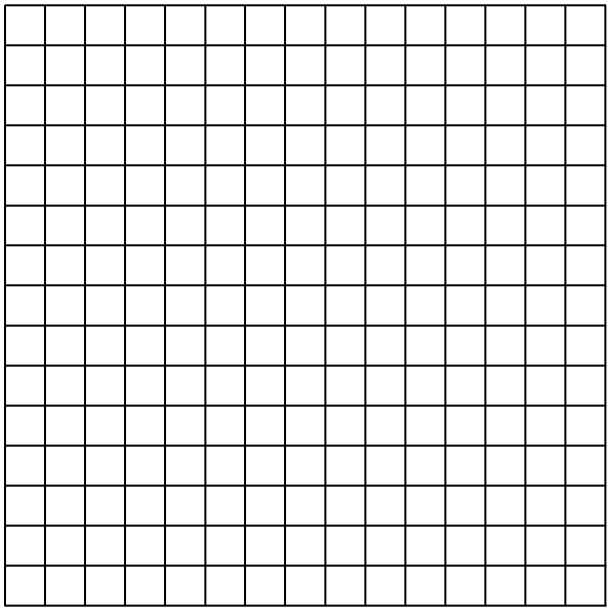
Exercise #1: The 2006 – 2007 Arlington High School Varsity Boy's basketball team had an excellent season, compiling a record of 15 – 5 (15 wins and 5 losses). The total points scored by the team for each of the 20 games are listed below in the order in which the games were played:

76, 55, 76, 64, 46, 91, 65, 46, 45, 53, 56, 53, 57, 67, 62, 64, 67, 52, 58, 62

(a) Complete the frequency table below.

POINTS SCORED	TALLY	FREQUENCY
40 - 49		
50 - 59		
60 - 69		
70 - 79		
80 - 89		
90 - 99		

(b) On the graph grid provided, create a histogram using the frequency table from (a) above.



Note: There should be no spaces between the bars on a frequency histogram because there are no gaps between intervals in the frequency table.

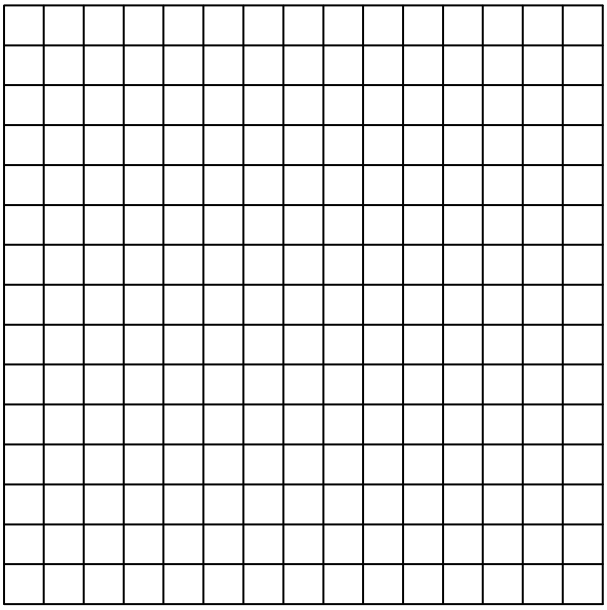
Exercise #2: The following set of data represents the scores on a mathematics quiz:

58, 79, 81, 99, 68, 92, 76, 84, 53, 57, 81, 91, 77, 50, 65, 57, 51, 72, 84, 89

Complete the frequency table below and, on the accompanying grid, draw and label a frequency histogram of these scores.

Mathematics Quiz Scores

Interval	TALLY	FREQUENCY
50 - 59		
60 - 69		
70 - 79		
80 - 89		
90 - 99		



Exercise #3: In what interval does the median of this data set lie?

Exercise #4: In what interval does the lower quartile of this data set lie?

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Frequency Histograms
Algebra 1 Homework

Applications

1. Jim Shorts is a star basketball player for the Arlington High School basketball team. The number of points scored by Jim in each of his last 20 games are as follows:

35, 28, 25, 34, 41, 26, 19, 23, 32, 20, 11, 8, 38, 48, 22, 25, 16, 19, 22, 40

(a) Complete the table to find the number in each interval.

Interval	Tally	Frequency
0 to 9		
10 to 19		
20 to 29		
30 to 39		
40 to 49		

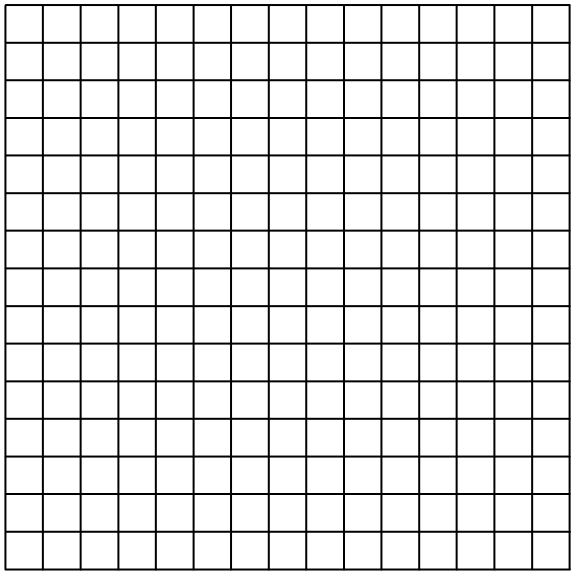
(b) Which interval contains the greatest frequency?

(c) In what percent of these 20 games did Jim score 30 or more points?

(d) In what interval does the median of this data set lie?

(e) In what interval does the upper quartile of this data set lie?

(f) Construct a frequency histogram for points scored by Jim in these 20 games.



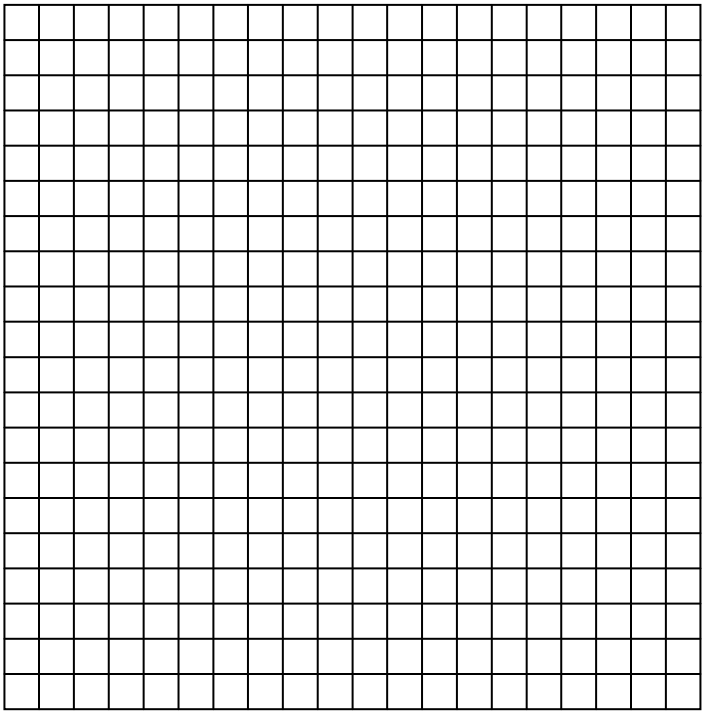
2. A random survey of 100 cars found the following frequency distribution for the fuel efficiency of the car, as measured in miles per gallon.

Fuel Efficiency (miles per gallon)	Number of Cars
10 to 14	4
15 to 19	17
20 to 24	36
25 to 29	24
30 to 34	10
35 to 39	6
40 to 44	3

(a) In which interval would the first quartile value fall? Justify your answer.

(b) In which interval would the median value fall? Justify your answer.

(c) Construct a frequency histogram for this data on the graph paper below. Make sure all axes are properly labeled.



(d) Why is it **not** possible to determine the mean value for this data set?