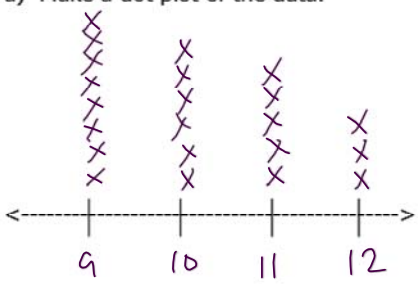
Name _____ Math 8A Period ____
Date _____ HW # ____ Outliers

1) The list gives the grade level for each member of the marching band at JFK High School.

9, 10, 9, 12, 11, 12, 9, 10, 10, 11, 10, 9, 10, 9, 11, 9, 11, 10, 12, 9, 11, 9

a) Make a dot plot of the data.



b) Describe the shape of the distribution.

Skewed right

2) Show that the data set **{7, 10, 54, 9, 12, 8, 5}** has an outlier by completing the following:

a) Q_3 = 12

b) Q_1 = 7

c) IQR = 5

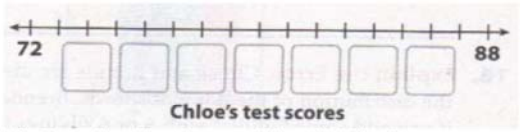
d) $Q_3 + 1.5(IQR)$ = $12+1.5(5)$ $12+7.5=19.5$

e) Is 54 an outlier? Yes

3) The table below shows Chloe's scores on English tests in each quarter of the school year.

Chloe's English scores			
Q1	**Q2**	**Q3**	**Q4**
74	**77**	**79**	**74**
78	**75**	**76**	**77**
82	**80**	**74**	**76**
76	**75**	**77**	**78**
85	**77**	**87**	**85**

a) Use the number line below to create a dot plot for all of Chloe's scores.



b) Describe the shape of the distribution.

3) c) Complete the table below for Chloe's scores. Round to the nearest hundredth if necessary.

mean	median	range	IQR	Standard deviation

d) Identify any outlier()s in the data set. SHOW WORK!

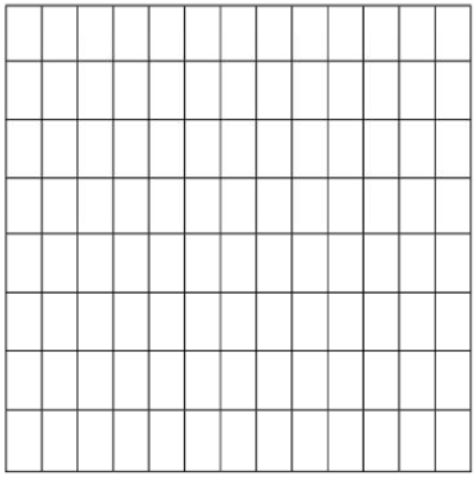
e) Which of the statistics from the table would change if the outlier(s) were removed? How do they change.

over

4) a) Graph a step function to the right for the parking charges shown on the sign below.

b) State the domain and the range of this function.

D: R:



5) Solve $x^2 + 4x - 3 = 0$ by completing the square. Leave your answer in radical form.

$\frac{4}{2} = (2)^2 = 4$

$x^2 + 4x + 4 - 4 - 3 = 0$

$(x+2)^2 - 7 = 0$

$+7 \quad +7$

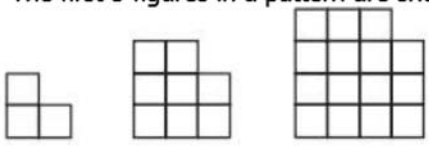
$\sqrt{(x+2)^2} = \sqrt{7}$

$x + 2 = \pm\sqrt{7}$

$-2 \quad -2$

$x = -2 \pm \sqrt{7}$

6) The first 3 figures in a pattern are shown.



= 1 small square

Which function represents f(n), the number of small squares in figure n?

a) $f(n) = n^2 - 1$ b) $f(n) = 2n^2 + 1$

c) $f(n) = (n + 1)^2 + 1$ d) $f(n) = (n + 1)^2 - 1$

7) Solve for x:

$3x + 2[1 - 3(x - 2)] = 2x$

8) Simplify:

$2(7x - 2y) + 6x - 7(x - 3y)$

Name _____ **Histograms!**

What you will learn...how to interpret and create histograms.

A histogram is a bar graph that is used to display the frequency of data divided into equal intervals. The bars must be of equal width and should touch but not overlap. The heights of the bars indicate the frequency of data values within each interval.

For example: 1) Use the histogram to the right to answer each question.

a) How many students took the test?

22 students

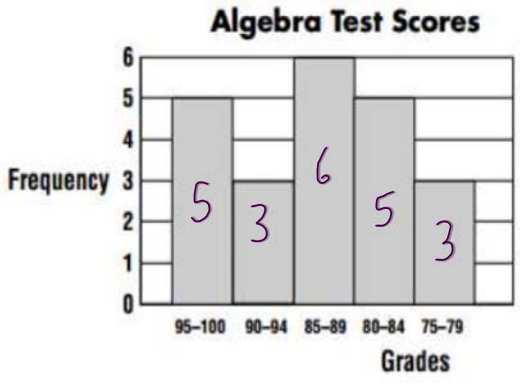
b) Which grade had the most test scores?

85-89

c) Which grade had the same number of test scores?

95-100 and 80-84
90-94 and 75-79

d) What statistical information can you tell about a data set by looking at the histogram?



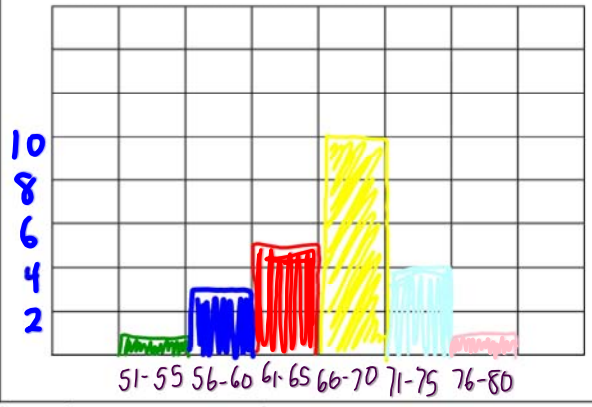
2) A survey was taken that asked people their height in inches. The data is shown below.

58	69	72	64	74	56	62	58
69	65	70	59	71	67	66	64
73	78	70	52	61	68	67	66

a) Create a frequency table and histogram of the data. Use the intervals:

51-55, 56-60, 61-65, 66-70, 71-75, and 76-80.

interval	frequency
51-55	1
56-60	3
61-65	5
66-70	10
71-75	4
76-80	1

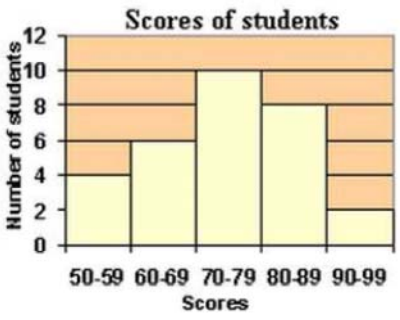


b) How many people in the survey are taller than 5 feet? 20 people

c) Which interval has the greatest number of heights? 66-70 inches

d) How many people were surveyed? 24 people

3) The histogram shows the scores of students. Estimate the mean and median of the scores. Explain how you arrived at your answers.



Mean: 70-79

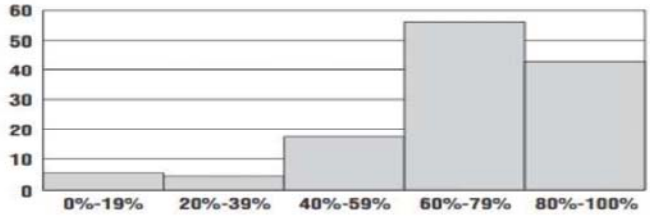
Median: 70-79

4)

Use the data in the histograms to determine which cross country team has a greater median daily mileage.

A. The Eagles have a greater median mileage.
B. The Panthers have a greater median mileage.
C. The medians are the same.
D. You cannot determine which median mileage is greater.

5) Select the answer choice, which represents a true statement, based upon the data in the histogram.



A. More students scored below 60% than above.

B. Mr. Browns test was 65 questions.

C. The second largest interval was 80%–100%.