ALGEBRA

Write your questions here!

Boxplots: _____

5 Number Summary: _____

(Min, Q_1, Med, Q_3, Max)

2016-2017 Golden State Warriors (Regular Season, 50+ games)		
Player	Games Played	Total Number of Points Scored
J M McAdoo, SF	52	147
Kevon Looney, SF	53	135
Kevin Durant, SF	62	1555
David West, PF	68	313
Zaza Pachulia, C	70	427
Patrick McCaw, G	71	284
Draymond Green, PF	76	776
Andre Iguodala, SF	76	574
Shaun Livingston, PG	76	388
Ian Clark, SG	77	527
JaVale McGee, C	77	470
Klay Thompson, SG	78	1742
Stephen Curry, PG	79	1999

Constructing a Basic Boxplot

The instructions below are for horizontal boxplots but easily can be adapted for vertical boxplots.

Step 1: Draw a number line. Add a scale that begins at or below the minimum and ends at or above the maximum.

Step 2: Directly above the number line, draw a rectangular box that extends from Q_1 to Q_3. Divide the box with a vertical line at the median.

Step 3: Draw two whiskers: one from the middle left side of the box to the minimum and the other from the middle right side of the box to the maximum.

Interquartile Range (IQR): _____

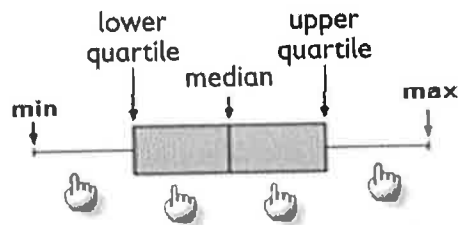**First (lower) quartile:** _____

Third (upper) quartile: _____

135, 147, 284, 313, 388, 427, 470, 527, 574, 776, 1555, 1742, 1999

Example Create a boxplot of the distribution of points scored by the 1997 - 1998 Chicago Bulls using the following 5 Number summary. Use the same graph.

Min = 167 **Q1** = 288 **Med** = 416 **Q3** = 841 **Max** = 2357

Interpreting Boxplots

Each part contains 25% of the data

Example: Bean goes fishing and catches 16 fish, displayed by their length in the stemplot below. Create a boxplot of the fish lengths.

Stem	Leaf
0	778999
1	00223579
2	12

key: 1|0 = 10 Inches

a.   Find the Interquartile Range.

b.   Between which two values is approximately 50% of the middle data contained?

c.   Find the range of the data.

d.   What percentage of the fish were greater than 9 inches long?

e.   What percentage of the fish were greater than 7 but less than 16 inches long?

Technology Help: 1-VarStats: ($\bar{x}$ is the mean, S_x = the Standard Deviation, scroll down for 5# summary)
                                   Zoom Stat (9) : Fits the window to your data
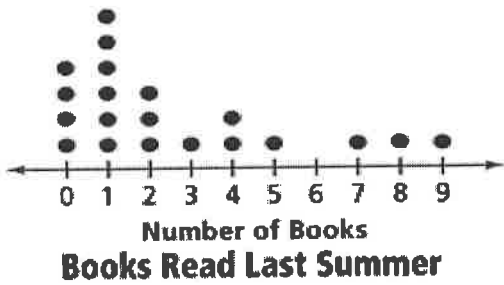
SUMMARY:

Now, summarize your notes here!

4.3 Boxplots and IQR

PRACTICE

1.   Find the 5-number summary and interquartile range for each set of data.

a.   {9, 11, 15, 17, 23, 24, 33, 33, 38, 38, 45, 46, 51}

b.   {20, 25, 30, 32, 35, 40, 40, 43, 44, 46, 47, 51, 57, 60}

c.   {47, 43, 35, 34, 32, 21, 17, 16, 11, 9, 5, 5}

2. Use the dotplot to create a boxplot. Plot the Boxplot on the same axis above the dotplot.

Number of Books

Books Read Last Summer

| 5 # Summary				
Min =	1Q =	Median =	3Q =	Max =

a. What percent of the students read between 1 and 9 books last summer?

b. The middle 50% of students read how many books?

c. The top 25% of students read between how many books?
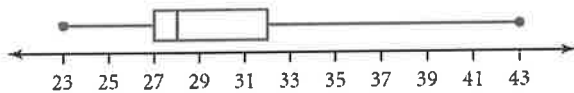
3.

Number of pets

Pulse rate (bpm)

a. Circle the points that represent the 5# summary values. If 2 points are needed to calculate a value, draw a circle around both points.
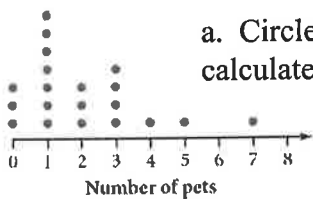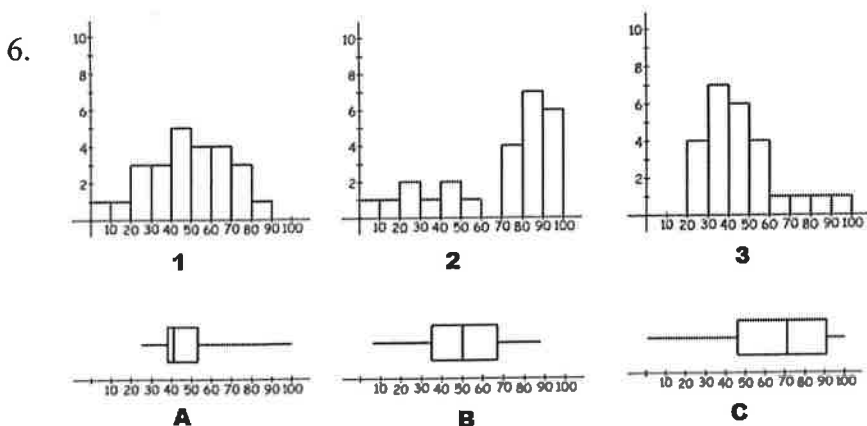
b. List the 5-number summary for each data set.
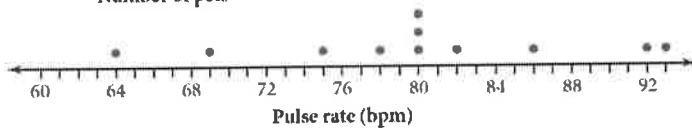
4. Which data set matches this box plot? (More than one answer may be correct.)

23 25 27 29 31 33 35 37 39 41 43

a. {23, 25, 26, 28, 28, 28, 28, 30, 31, 33, 41, 43}
b. {23, 23, 24, 25, 26, 27, 29, 30, 31, 33, 41, 43}
c. {23, 27, 28, 28, 33, 43}
d. {23, 27, 28, 28, 29, 32, 43}

5. Describe the boxplot above as skewed left, symmetric, or skewed right and tell why.

6.

1

2

3

Histogram #1 Matches Boxplot _____

Histogram #2 Matches Boxplot _____

Histogram #3 Matches Boxplot _____

A

B

C

7. Draw a boxplot and find the interquartile range for each of the following sets of data:

   a. Shoe size: {6.5, 7, 8.5, 7, 10, 7.5, 10, 5.5, 7.5, 5, 8.5, 10.5, 9, 12, 8.5, 9}

   b. Games in the World Series: {5, 7, 5, 7, 6, 6, 7, 7, 6, 5, 7, 7, 6, 5, 7}

   c. Number of Words in Book Title {2, 6, 4, 5, 4, 3, 1, 3, 3, 6, 2, 1, 1, 4, 1}

8. The following boxplots are called "Beanplots" because they look weird and freak people out. Describe the relationships between the numbers in the five number summaries for each plot:

   a.

   b.

   c.

   d.
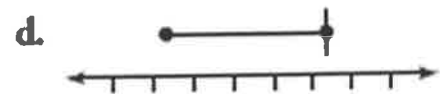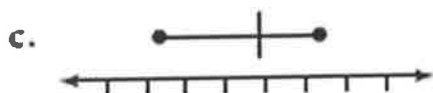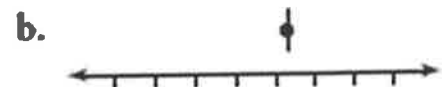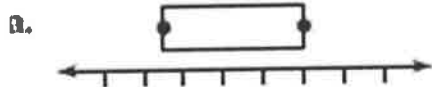
SMP #2

9. Multiply: $(2x - 1)^2$

10. Solve the following equation for w: $t + \frac{1}{2}w = \frac{r}{x}$

11. Solve the following system: $\begin{cases} -2x - y = 3 \\ 2x + 2y = -8 \end{cases}$
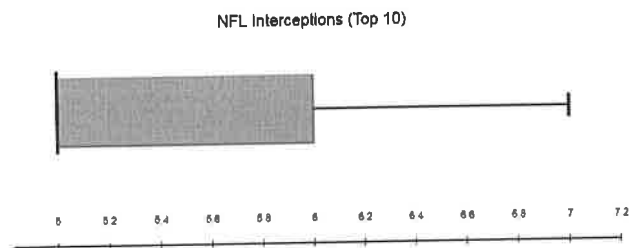
6.3 Boxplots and IQR

1. Draw a boxplot of the data set represented in the stemplot to the right.

pulse rate

6	8 8 8 9
7	0 1 1 4 6 6 8
8	2 6 8 8
9	0 6
10	4
11	0

Key:
6 | 8 means 68 bpm

Data Set #3

2. This boxplot shows the number of interceptions made by the ten interception leaders in 2016-2017 in the NFL.

NFL Interceptions (Top 10)

a. Can you find the median? Can you find the mean?

b. From the boxplot you can tell that the maximum number of interceptions was 7. For what other values can you determine the number of interceptions?

c. Can you find the range? Can you find the Interquartile Range?

A1CC 4.3 EXIT TICKET –

Find the interquartile range for each of the data sets:

a. 4, 5, 6, 8, 9, 11, 13, 16, 16, 18, 20, 21, 25, 30, 31, 33, 36, 37, 40, 41

b.