4.3 Boxplots and IQR



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





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.

Push these

buttons for 5#

Summary. Don't

forget to scroll

down!!

enter

enter

CLEAR

2nd

b. List the 5-number summary for each data set.

Min = O	Min = 64
Q1 = 1	01 = 75
Med = 1.5	
$Q_3 = 3$	O3 = 86
Max = 7	Max = 93
IQR = 3 - 1 = 2	IQR = 86 - 75 = 11

4. Which data set matches this box plot? (More than one answer may be correct.)



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

The box plot above is skewed right because the values are spread out more on the right. The middle 50% of data lays between 27 and 32. The IQR is 5.

6. Match each boxplot with the data set:



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}

5 # summary: Min = 5, Q1 = 7, Med = 8.5, Q3 = 9.5, Max = 12 IQR = 2.5

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

5 # summary: Min = 5, Q1 = 5, Med = 6, Q3 = 7, Max = 7 IQR = 2

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

5 # summary: Min = 1, Q1 = 1, Med = 3, Q3 = 4, Max = 6 IQR = 3

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:



For this shape of Boxplot, the Min must equal the Q1, and the max must equal the Q3. Also, the median is equal to Q1 or Q3, but we can't tell which one.

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

 $x - 1 (2 \times -1)$

 $4x^{2} - 4x + 1$

 $-2 \times -(-5) = 3$

 $-2 \times -2 \times + 1$

Solve the following system:

-2 x = -2 x =1





9.

11.

For this shape, Q1 the Median and Q3 must be all equal.











For this shape, all the values of the 5# Summary are equal



For this shape, The Median, Q3 and the Maximum values are all equal to each other. Minimum Value must be different.

