4-3-19

Aim: SWBAT interpret data displayed as dot plots and box plots.

HW: None ???

Do Now: Packet Page 14

HOMEWORK

The tables show the quiz scores in two 7th grade Social Studies classes.

Class A			
9	8	8	9
10	9	8	10
9	9	10	

Class B			
9	10	8	10
10	9	10	6
5	7	8	10

Class A	Class B
Mean $\frac{8+8+8+9+9+9+9+9+10+10+10}{11}$ $\rightarrow \frac{99}{11} = 9$	**Mean** $\frac{5+6+7+8+8+9+9+10+10+10+10+}{12}$ $\rightarrow \frac{102}{12} = 8.5$
Median 8, 8, 8, 8, 8, (9), 9, 9, 10, 10, 10	**Median** 5, 6, 7, 8, 8, [9, 9], 10, 10, 10, 10, 10 $\frac{9+9}{2} \rightarrow 9$
Mode 9	**Mode** 10

6. Which best describes the comparison between the mode quiz scores?

A) The modes are the same.

B) The mode score for Class A is 2 points higher than for Class B.

C) The mode score for Class A is 1 point higher than for Class B.

(D) The mode score for Class A is 1 point lower than for Class B.

7. Which best describes the comparison between the mean quiz scores?

E) The means are the same.

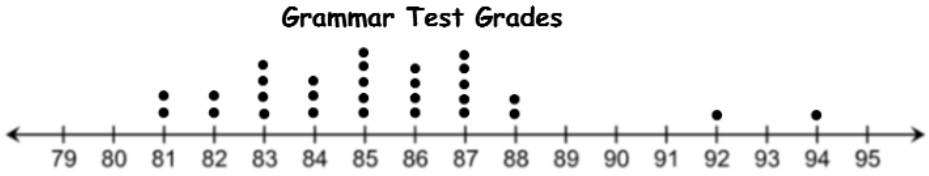
(F) The mean score for Class A is 0.5 points higher than for Class B.

G) The mean score for Class A is 1 point higher than for Class B.

H) The mean score for Class A is 1 point lower than for Class B.

Aim: SWBAT interpret data displayed as dot plots and box plots (a.k.a. box-and-whisker plots).

Do Now: Use the dot plot to answer questions 1 – 7.

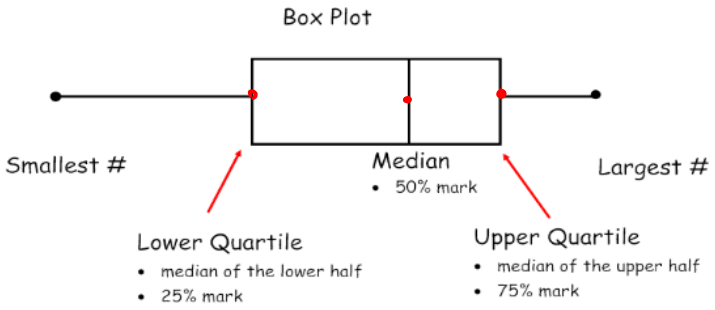


1. How many students are in in Ms. Parson's class? 29
2. What is the mean test grade? $\frac{2476}{29} \rightarrow 85\frac{11}{29}$
3. What is the median test grade? 85
4. What is the mode test grade? 85 and 87
5. Which grades would be considered outliers? 92 and 94 *
6. What is the range of the test grades? 94 − 81 = 13
7. Do you think the dot plot shows consistent data? Why or why not?

yes. The dots are close together and the range is small.

Measures of Variation, such as the range and the interquartile range, show how spread out the data is. The different spreads provide clues as to how consistent or inconsistent the data in the set is. Two statistical displays can help with the analysis.

- **Dot Plot** – A statistical diagram that represents a list by placing a dot over the corresponding number. Stacked dots show how often a number is repeated in a list.
- **Box Plot (Box-and-Whisker Plot)** – A data display that divides the data set into four parts using the lower extreme, lower quartile, median, upper quartile, and upper extreme.



Finding the Lower and Upper Quartiles

Step 1: List the data from least to greatest and determine the median.

Step 2: Make the lower group and the upper group.

- If there is **one middle number**, that number (the median) does not join a group. Instead, it separates the data into a lower half and an upper half.
- If there are **two middle numbers**, the left number joins the lower half and right number joins the upper half.

Step 3: Find the median of the lower group. (Lower Quartile / 25% mark / Quartile 1)

Step 4: Find the median of the upper group. (Upper Quartile / 75% mark / Quartile 3)

	A	B
	1, 2, 3, 4, 5 ($\frac{1+2}{2}$, $\frac{4+5}{2}$)	1, 2, 3, 4, 5, 6 ($\frac{3+4}{2}$)
Minimum (Lower Extreme)	1	1
Quartile 1/ 25% Mark/ Lower Quartile	1.5	2
Median / 50% Mark / Middle Value	3	3.5
Quartile 3/ 75% Mark / Upper Quartile	4.5	5
Maximum (Upper Extreme)	5	6
Range (Maximum - Minimum)	5 - 1 = 4	6 - 1 = 5
Interquartile Range (Q3 - Q1) IQR	4.5 - 1.5 = 3	5 - 2 = 3