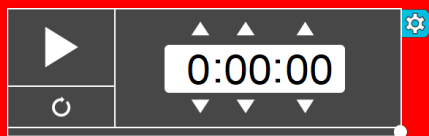


January 27, 2020

- 1) Notes - *Start Warm Up*
- 2) CALC
- 3) Turn in HW



Topic: Reading and Comparing Boxplots

Name: _____

What am I learning today?

Warm Up

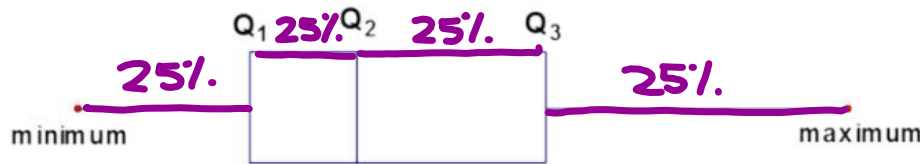
- 1) Name the 3 measures of **center**. *Mean, Median, Mode*
- 2) Name the 3 measures of **spread**. *Range, IQR, St. Dev.*
- 3) Explain in detail how to calculate an outlier. Make sure to include the formulas.
 $LF: Q_1 - 1.5(IQR) = \underline{\hspace{2cm}}$
 $UF: Q_3 + 1.5(IQR) = \underline{\hspace{2cm}}$

Main Ideas/ Questions

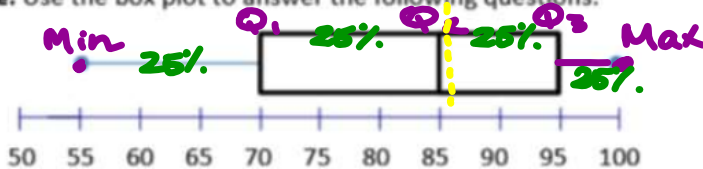
Notes

- A boxplot contains a total of 4 sections, each worth 25 % each.
- It does not matter how large or small a section is because they are all equal!

Label the following boxplot with the appropriate percentages.



Example: Use the box plot to answer the following questions.



Median = 85 $Q_2 = \underline{85}$ $Q_1 = \underline{70}$ $Q_3 = \underline{95}$ Min = 55 Max = 100

Range = 45 IQR = 25
 $100 - 55$ $95 - 70$

Lower half of data = 55 to 85

Upper half of data = 85 to 100

Middle half of data = 70 to 95

Upper 25% of data = 95 to 100

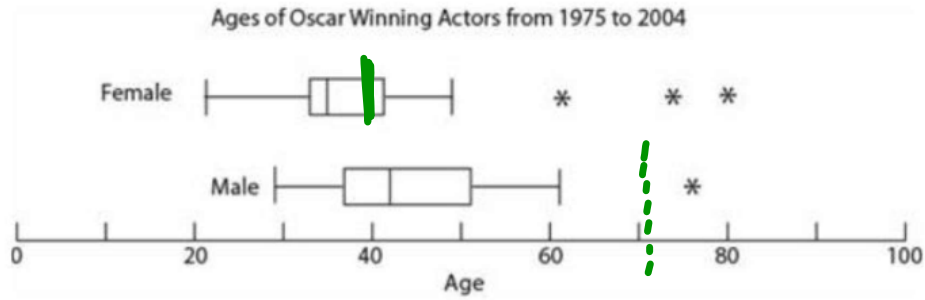
Lower 25% of data = 55 to 70

*** If 30 students how many scored above 95?**
 % (TOTAL)
 $.25(30) = 7.5$
 ≈ 8 stud.

Topic: Reading and Comparing Boxplots

Date: _____

Example



IQR: $Q_3 - Q_1$
F: $41 - 32$
F = 9
M: 14

Range:
F.R. = 59
M.R. = 47

UF:

- State the 5 number summary and calculate the IQR for both males and females.
Females: Min: 21 Q_1 : 32 Q_2 : 35 Q_3 : 41 Max: 80
Males: Min: 29 Q_1 : 37 Q_2 : 42 Q_3 : 51 Max: 76
- Which has the most variability? Justify your answer with calculations and vocabulary.
spread out.
IQR: males > females **Range: females > male**
- True or **False** the majority of women actresses are older than 40. Explain.
> 50%
↳ B/c barely 25% are older than 40.
- Using the outlier formula. Prove that the age of 78 is an outlier for the **males**.
UF: $Q_3 + 1.5(IQR)$
= $51 + 1.5(14) = 72$
78 is above 72
↳ outlier

Mean vs. Median

Recall:

- When the shape is **skewed** the best measure of center is the **MEDIAN**
 - When the shape is symmetric the best measure of center is the **MEAN**
- OUTLIERS** skew the data.

Notes

When your data is skewed left, the mean is **less** than the median.
 When your data is skewed right, the mean is **more** than the median.
 When your data is symmetric, the mean is **equal** to the median.

Examples

