

# CASE CLOSED

Neilsen Ratings  
Chapter 1

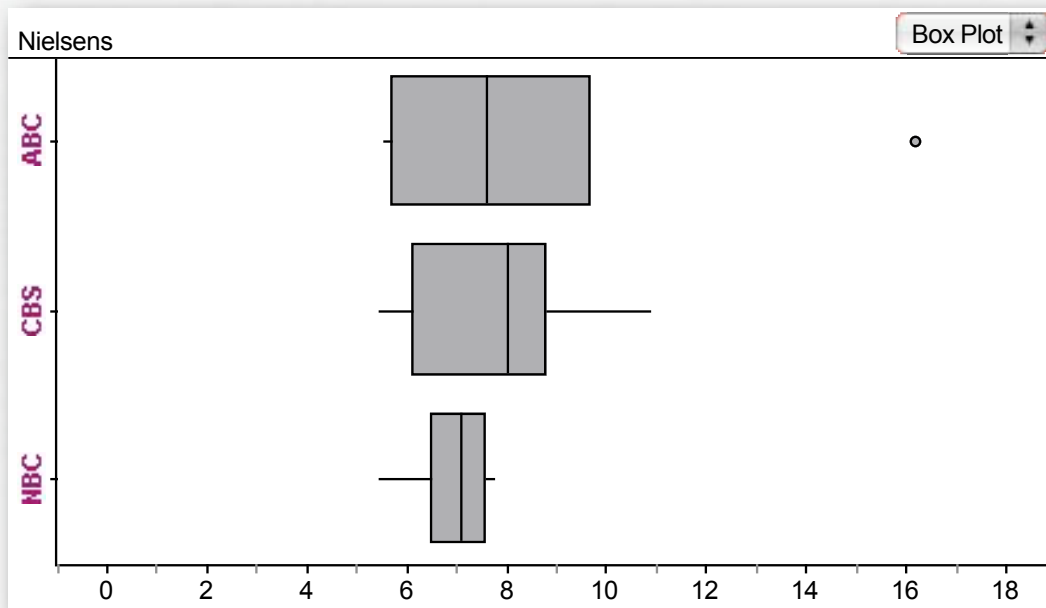
AP Stats at LSHS

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# I: Graphical Analysis

## 1. Construct a graphical display:

- The centers of the distributions are approximately the same, although CBS is a little higher. ABC has the most variability while NBC has the most consistent ratings. ABC is skewed to the right, NBC is skewed left, and CBS is roughly symmetric.



# II: Numerical Analysis

2. Because of the skewness, we should use the medians and IQRs to compare centers and spreads.

## □ Numerical Summaries (5-Number Summary)

Nielsen	
	8.7166667
	5.5
<b>ABC</b>	5.7
	7.6
	9.7
	16.2

S1 = mean ( )  
S2 = min ( )  
S3 = Q1 ( )  
S4 = median ( )  
S5 = Q3 ( )  
S6 = max ( )

Nielsen	
	6.88
	5.4
<b>NBC</b>	6.5
	7.1
	7.6
	7.8

S1 = mean ( )  
S2 = min ( )  
S3 = Q1 ( )  
S4 = median ( )  
S5 = Q3 ( )  
S6 = max ( )

Nielsen	
	7.9777778
	5.4
<b>CBS</b>	6.1
	8
	8.8
	10.9

S1 = mean ( )  
S2 = min ( )  
S3 = Q1 ( )  
S4 = median ( )  
S5 = Q3 ( )  
S6 = max ( )

# III: Outliers

3. It appears there may be an outlier in the ABC dataset.

Using the 1.5 IQR Rule, and value more than 1.5IQRs above or below the median is an outlier.

$$1.5(Q3 - Q1) = 1.5(9.7 - 5.7) = 1.5(4) = 6$$

$$\text{Median} - 6 = 7.6 - 6 = 1.6 \text{ (lower fence)}$$

$$\text{Median} + 6 = 7.6 + 6 = 13.6 \text{ (upper fence)}$$

Since  $16.2 > 13.6$ , it is an outlier.

## IV: In context

4. The mean percent is nonresistant because the average ratings could be pulled higher or lower based on extremely successful or unsuccessful shows (outliers).

Even if all shows were unsuccessful (low average), one or two very successful additions to the lineup could pull the average up quite a bit.

# IV: In context

5. Your answers may vary...

Based on the medians, I would rank CBS first, ABC second, and NBC third.

Even though ABC had the highest ranked show, it had more variability overall and a lower median than CBS.

NBC was the most consistent, but had the lowest median of the three, meaning half of its shows ranked lower than over half of the shows on each of the other two networks.