

Data Analysis Self Test

Name _____

Date _____ Pd. _____

1. The numbers below represent the mean number of students per teacher in the 50 states in 1988.
- | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 18.7 | 17.0 | 18.2 | 15.7 | 22.7 | 17.8 | 13.1 | 16.4 | 13.3 | 17.1 | 18.5 | 21.1 | 16.0 |
| 20.6 | 17.1 | 17.8 | 15.8 | 15.2 | 17.8 | 18.2 | 14.6 | 16.8 | 13.7 | 19.8 | 17.0 | 14.6 |
| 18.4 | 15.9 | 15.8 | 15.0 | 20.3 | 16.2 | 13.6 | 18.5 | 14.9 | 17.5 | 15.4 | 17.6 | 16.5 |
| 18.4 | 15.9 | 14.6 | 17.2 | 15.4 | 19.3 | 24.5 | 13.6 | 16.1 | 20.4 | 15.1 | | |

A. Make a stem-and-leaf plot of the ratios.

B. How many of the ratios were in the 17s?

C. Find the mean, median, and mode of the ratios.

D. What is the range of the ratios?

E. Find the lower quartile (Q1), upper quartile (Q3), and the interquartile range (IQR).

F. Identify any outliers. (If the number is less than $Q1 - IQR$ or greater than $Q3 + IQR$ then it is an outlier.)

G. Make a box-and-whisker plot of the data.

Add or subtract the following matrices.

$$2. \begin{bmatrix} 5 & 8 & -2 \\ 0 & 4 & -1 \\ 3 & 1 & 0 \end{bmatrix} + \begin{bmatrix} 3 & -2 & 4 \\ -4 & 2 & 3 \\ 7 & -8 & 4 \end{bmatrix}$$

$$3. \begin{bmatrix} -1 & 0 \\ 2 & 1 \\ 4 & -3 \end{bmatrix} - \begin{bmatrix} 5 & -2 \\ -1 & 1 \\ -3 & 2 \end{bmatrix}$$

Multiply the following matrices.

$$4. -2 \begin{bmatrix} 5 & 8 & -2 \\ 0 & 4 & -1 \\ 3 & 1 & 0 \end{bmatrix}$$

Simplify the following expression.

$$5. -3 \begin{bmatrix} 5 & 8 & -2 \\ 0 & 4 & -1 \\ 3 & 1 & 0 \end{bmatrix} + 5 \begin{bmatrix} 3 & -2 & 4 \\ -4 & 2 & 3 \\ 7 & -8 & 4 \end{bmatrix}$$

$$6. 2 \begin{bmatrix} -1 & 0 \\ 2 & 1 \\ 4 & -3 \end{bmatrix} - 2 \begin{bmatrix} 5 & -2 \\ -1 & 1 \\ -3 & 2 \end{bmatrix}$$