Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2017-2018 Stats Midterm Review 10-4-17 hour 1 2 3 4 5 6 7

1. Complete the table using the frequency and the classes given

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bowling Scores at Peoria Invitational | Frequency | Cumulative frequency | Relative frequency as a PERCENT | Cumulative Relative Frequency as a PERCENT | Midpoint of class | Class Upper Boundary | Product of midpoint and frequency | Mean from frequency table |
| 1-50 | 0 |  |  |  |  |  |  |
| 51-100 | 1 |  |  |  |  |  |  | Median lies in which class? |
| 101-150 | 1 |  |  |  |  |  |  |
| 151-200 | 7 |  |  |  |  |  |  |
| 201-250 | 11 |  |  |  |  |  |  | Which class contains the Mode? |
| 251-300 | 10 |  |  |  |  |  |  |
|  | Sum of frequency |  |  |  |  |  | Sum of the product and the frequency |  |

1. Complete the table using the frequency and the classes given

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of Absences | Frequency | Cumulative frequency | Relative Frequency as a PERCENT | Cumulative Relative Frequency as a PERCENT | Class Upper Boundary | Midpoint of class | Product of midpoint and frequency | Mean from frequency table |
| 1-10 | 10 |  |  |  |  |  |  |
| 11-20 | 15 |  |  |  |  |  |  | Median lies in which class? |
| 21-30 | 5 |  |  |  |  |  |  |
|  | Sum of frequency |  |  |  |  |  | Sum of the product of midpoint and the frequency |
|  |  |  |  |  |  | Which class contains the Mode? |

Directions: Create frequency polygon, cumulative frequency polygon, relative frequency table, and OGIVE from data in #1

Bowling Scores

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency Table | | Relative Frequency Table | |
| |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |
| OGIVE | | Cumulative Frequency Table | |
| |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  | |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |

Directions: Create frequency polygon, cumulative frequency polygon, relative frequency table, and OGIVE from data in #2

Number of Absences

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency Table | | Relative Frequency Table | |
| |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  | |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |
| OGIVE | | Cumulative Frequency Table | |
| |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  | |  |  | | --- | --- | |  |  | | x | y | |  |  | |  |  | |  |  | |  |

Directions: Use the following numbers in data list A {1,7,8,8,8,9,10,16} to answer the questions below

1. What number can you add to the data list A to get a mean of 20?
2. Assuming that you start with the original data list A, what number(s) can you add to the list to get a median of 9.5?

Directions: Use the following data sets to answer the following questions below

|  |  |
| --- | --- |
| Data Set B  { 1, 2 , 2, 3, 4 , 4, 8, 8, 9, 9, 10, 11, 12} | Data Set C  { 1, 1, 2 , 2, 3, 4 , 4, 5, 9, 10, 11, 11, 12} |
| Data Set D  { 1, 1, 1, 1, 2, 3, 4, 4, 4, 4, 5, 6, 8, 9, 9} | Data Set E  { 2, 2, 3, 7, 7, 7, 8, 8, 9, 9, 10, 11, 11, 11, 11, 15, 15} |

1. Determine each of the following for data list B Mode \_\_\_\_\_ Median \_\_\_\_\_\_ Mean \_\_\_\_\_
2. Determine each of the following for data list C Mode \_\_\_\_\_ Median \_\_\_\_\_\_ Mean \_\_\_\_\_
3. Determine each of the following for data list D Mode \_\_\_\_\_ Median \_\_\_\_\_\_ Mean \_\_\_\_\_
4. Determine each of the following for data list E Mode \_\_\_\_\_ Median \_\_\_\_\_\_ Mean \_\_\_\_\_
5. Which data lists, if any, are positively skewed?

Circle all data sets that are positively skewed Data Set B Data Set C Data Set D Data Set E None of these

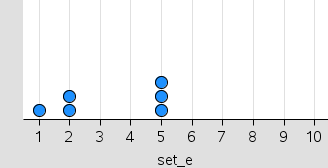
1. Which data lists, if any, are negatively skewed?

Circle all data sets that are negatively skewed Data Set B Data Set C Data Set D None of these

1. Which data lists, if any, are symmetric?

Circle all data sets that are symmetric Data Set B Data Set C Data Set D None of these

Directions: Use the dot plot to answer questions about Data Set E



1. What numbers need to be added to this data set E to create a symmetric list
2. Using only the original numbers and numbers that are positive and less than or equal to 10, switch the skewness of Data Set E

Use the given information about MLB Salaries and MLS Salaries to answer the questions below

|  |  |  |  |
| --- | --- | --- | --- |
| Top Ten MLB Salaries | Top Ten MLB Salaries Rounded to tenth of a million | Top Ten MLS Salaries | TOP Ten MLS Salaries Rounded to tenth of a million |
| Clayton Kershaw | 33.0 | Kaka | 7.2 |
| David Price | 30.0 | Sebastian Giovinco | 7.1 |
| Miguel Cabrera | 28.0 | Michael Bradley | 6.5 |
| Justin Verlander | 28.0 | Andrea Pirlo | 5.9 |
| Felix Hernandez | 26.9 | David Villa | 5.6 |
| Albert Pujols | 26.0 | Giovani dos Santos | 5.5 |
| CC Sabathia | 25.0 | Bastien Schweinsteiger | 5.4 |
| Robinson Cano | 24.0 | Jozy Altidore | 4.9 |
| Zach Greinke | 24.0 | Clint Dempsey | 3.9 |
| Joe Mauer | 23.0 | Diego Valeri | 2.6 |

Source: https://deadspin.com/here-are-the-2017-salaries-for-mls-players-1794648467

BEFORE COMPLETING ANYTHING ELSE **NOTE: THIS IS A SAMPLE OF DATA!**

1. Find the mean

Mean of TOP TEN MLB PLAYERS \_\_\_\_\_\_\_\_ Mean of TOP 10 MLS players\_\_\_\_\_\_

1. Find the median.

Median of TOP TEN MLB PLAYERS \_\_\_\_\_ Median of TOP 10 MLS players\_\_\_\_\_\_

1. Find the range.

Range of TOP TEN MLB Players \_\_\_\_\_\_\_\_ Range of TOP 10 MLS Players\_\_\_\_\_\_

1. Determine the values in the table below

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sum of TOP 10 MLB Salaries | Mean TOP 10 MLB Salaries | TOP of variance and SD fraction for the salaries of the TOP 10 MLB Salaries | Variance of TOP 10 MLB salaries | SD of TOP 10 MLB Salaries |
|  |  |  |  |  |
| Sum of TOP 10 MLS Salaries | Mean TOP 10 MLS Salaries | TOP of variance and SD fraction for the salaries of the TOP 10 MLS Salaries | Variance of TOP 10 MLS salaries | SD of TOP 10 MLS Salaries |
|  |  |  |  |  |

Finding the number of standard deviations related to player salaries related to the mean

 NOTE THIS WILL BE DIFFERENT FOR #5 and #6

1. Find the number of standard deviations from the mean for the following players

Clayton Kershaw is \_\_\_\_\_\_\_ SD to the right of the mean of the TOP TEN MLB Salaries

Justin Verlander is \_\_\_\_\_\_\_ SD to the right of the mean of the TOP TEN MLB Salaries

Zach Greinke is \_\_\_\_\_\_\_ SD to the left of the mean of the TOP TEN MLB Salaries

1. Find the number of standard deviations from the mean for the following players

Kaka is \_\_\_\_\_\_\_ SD to the right of the mean of the TOP TEN MLS Salaries

Michael Bradley is \_\_\_\_\_\_\_ SD to the right of the mean of the TOP TEN MLS Salaries

Clint Dempsey is \_\_\_\_\_\_\_ SD to the left of the mean of the TOP TEN MLS Salaries

1. Using the TOP Paid MLB players complete the following statements

(use nearest hundredth of a million)

Mean + SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

Mean + 2SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

Mean + 3SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

1. Using the TOP Paid MLS players complete the following statements

(use nearest hundredth of a million)

Mean + SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

Mean + 2SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

Mean + 3SD = low \_\_\_\_\_\_\_\_ to high \_\_\_\_\_\_\_\_\_\_

1. Find the IQR.

IQR of TOP TEN MLB Players \_\_\_\_\_\_\_\_ IQR of TOP 10 MLS Players\_\_\_\_\_\_

1. The name of a player is what kind of data Nominal, Ordinal, or Ratio

1. The jersey of a player is what kind of data Nominal, Ordinal, or Ratio
2. The height of a player is what kind of data Nominal, Ordinal, or Ratio
3. The salary of a player is what kind of data Nominal, Ordinal, or Ratio
4. The number of minutes a player plays is what kind of data Quantitative Qualitative
5. The number of minutes a player plays is what kind of data Continuous Discrete
6. The number of goals a player scores is what kind of data Quantitative Qualitative
7. The number of goals a player scores is what kind of data Continuous Discrete