## Unit 6 Describing Data Mock Test

## Mean, Median and Mode

1. 

Justin and TJ are servers at a local restaurant. The table below shows the tips they earned.

| Tips | Justin | T.J. |
| :--- | :---: | :---: |
| Monday | $\$ 32$ | $\$ 58$ |
| Tuesday | $\$ 45$ | $\$ 48$ |
| Wednesday | $\$ 50$ | $\$ 40$ |
| Thursday | $\$ 33$ | $\$ 42$ |
| Friday | $\$ 50$ | $\$ 42$ |

Which student has a higher median tip for the week and by how much?
a. Justin's median tip is $\$ 4$ more than TJ's median tip.
b. TJ's median tip is $\$ 4$ more than Justin's median tip.
c. Justin's median tip is $\$ 3$ more than TJ's median tip.
d. TJ's median tip is $\$ 3$ more than Justin's median tip.

At a restaurant a manger recorded the sales for one of his servers named Damaria.
2.
$\$ 52, \$ 60, \$ 48, \$ 52, \$ 46, \$ 52, \$ 28, \$ 192, \$ 71, \$ 59$
Which center should be used to best represent the data?
a. Damaria's mean sale is $\$ 70$.
b. Damaria's median sale is $\$ 52$.
c. Damaria's mode sale is $\$ 52$
d. Damaria's range of her sales is $\$ 164$

What is the mean of the following data set shown in the dot plot:
3.

a. 7.6
b. 8.5
c. 9.5
d. 9
4.

What is the mode of the following data set shown in the dot plot:

a. $\quad 7.6$
b. 8.5
c. 9.5
d. 9

## MAD (Mean Absolute Deviation)

Consider the data set:
5. $60,44,56,52,48$

| Data Points $(\mathbf{x})$ | Mean $(\overline{\mathbf{x}})$ |
| :---: | :---: |
| 60 | 52 |
| 44 | 52 |
| 56 | 52 |
| 52 | 52 |
| 48 | 52 |

What is the mean absolute deviation of the data set (use the table for help)?
a. 0
b. 4
c. 4.8
d. 8
6.

Consider the data set:
$5,9,11,17,23$
The data set has a mean deviation of 5.6. If you were to double every number in the data set and recalculate the mean deviation, what would it be?
a. $\quad 5.6$
b. 7.6
c. $\quad 11.2$
d. 12.1

## Box and Whisker Plots

Consider the following Basic Box \& Whisker Plot.
7.


What is the Inner Quartile Range (IQR) of the data set shown in the graph?
a. 0
b. 1
c. 6
d. 10

Outlier Formulas:

$$
Q_{1}-1.5(I Q R) \quad Q^{3}+1.5(I Q R)
$$

8. 

$20,52,86,80,44,49,57,41,44,55$
9.
$67,71,79,65,52,71,73,94,69$

Outliers : $\qquad$
10.

Consider the following unorganized data set:
$12,15,8,29,30,27,19,12$
What is the first quartile $\left(\mathbf{Q}_{1}\right)$ of the data set?
a. 8
b. 12
c. $\quad 17$
d. 28
11. Consider the following unorganized data set:
$12,15,8,29,30,27,19,12$
What is the Inner Quartile Range (IQR) of the data set?
a. 12
b. 16
c. $\quad 17$
d. 28

## Frequency Table

12. Cameron surveys students in his school who play sports, and asks them which sport they prefer. He records the responses in the table below.

| Gender | Preferred sport |  |  |
| :---: | :---: | :---: | :---: |
|  | Baseball | Soccer | Basketball |
| Male | 49 | 52 | 16 |
| Female | 23 | 64 | 33 |

a) What is the joint frequency of male students who prefer soccer? (How many male students prefer soccer?)
b) What is the marginal frequency of each type of sport? (Total the number of males and females who played baseball. Then give total for the other two sports.)
13. The two-way table shows some information about the number of students in a school.

|  | Year Group |  |  | Total |
| :--- | :---: | :---: | :---: | :---: |
|  | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ |  |
| Boys |  |  | 125 | 407 |
| Girls |  | 123 |  |  |
| Total | 303 | 256 |  | 831 |

Complete the two-way table.
14. Elizabeth wanted to know the gender and the hair color of each of her classmates. She arranged the results of this survey into a two-way table, shown below.
a. According to the table, what is the joint frequency of boys with red hair?
b. What is the marginal frequency of blonde hair?

|  | Bromin | Blande | Red | Total |
| :---: | :---: | :---: | :---: | :---: |
| Boys | 5 | 2 | 3 | 10 |
| Girls | 7 | 6 | 4 | 17 |
| Total | $\mathbf{1 2}$ | $\mathbf{8}$ | 7 | 27 |

15. 
16. a. You surveyed the members of your school club about the type of end of the year party they would like. Below is a two-way table for the results. Create a two-way table displaying all the relative frequencies.

|  | Males | Females | Total |
| :---: | :---: | :---: | :---: |
| Miniature <br> Golf | 8 | 4 |  |
| Skating | 3 | 10 |  |
| Laser <br> Tag | 9 | 6 |  |
| Total |  |  |  |


|  | Males | Females | Total |
| :---: | :--- | :--- | :--- |
| Miniature <br> Golf |  |  |  |
| Skating |  |  |  |
| Laser <br> Tag |  |  |  |
| Total |  |  |  |

b. Using the above data, find the conditional probability of .....
(i) those wanting laser tag, given that they are female.
(ii) those wanting miniature golf, given that they are male.
(iii) females, given that they want laser tag.
(iv) males, given that they want miniature golf.

## Correlation/Line of Best Fit

16. Which histogram below shows a data set that is skewed right?

a. Data Value


b.

Data Value
17. The data below shows the minimum wage requirement of the U.S. government in years, x, after 1960. Based on the data provided, what would be the best linear model using your calculator's regression model?

| Year | 1961 | 1964 | 1967 | 1969 | 1975 | 1976 | 1978 | 1979 | 1981 | 1992 | 1998 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years after 1960 ( x ) | 1 | 4 | 7 | 9 | 15 | 16 | 18 | 19 | 21 | 32 | 38 |
| Minimum Wage (y) | \$1.00 | \$1.25 | 1.5 | \$1.6 | \$2.10 | \$2.30 | \$2.6 | \$2.9 | \$3.3 | 34.2 | \$5.15 |

a. $y=0.110 x+1.327$
b. $y=0.112 x+0.888$
c. $y=0.114 x+0.691$
d. $y=0.115 x+0.644$
18. Which data set below has the weakest correlation?
a.

c.

b.

d.


The table displays data for Nutrition Guides of a single
19. serving of particular foods.

Assuming there exists a correlation between Calories and Fat
Grams, find a linear regression model determines approximate Fat Grams (y) as a function of Calories (x).

| Food | Piza Roll | Pop Tarts | Gold Fish Ck | Kudo CC | Domitos | Oreo ca Cream | Barron Piza | Tosster Strucel |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Calories (x) | 230 | 220 | 150 | 130 | 140 | 160 | 340 | 190 |
| Fat Grams (y) | 11 | 4 | 6 | 5 | 7 | 8 | 18 | 8 |

a. $\quad r \approx 0.917$
b. $r \approx 0.700$
c. $\quad r \approx 0.946$
d. $r \approx 0.836$

