**Question 1** Standard: A1.DS.A.1 Blooms: Apply DOK: 1 Total Points: 4

Points Scored:

Points Possible: 70

---------- = %

Using the given data table, create a bar graph to display the data in the space provided below:

Number of Students

15

10

5

0

Sport

|  |  |  |
| --- | --- | --- |
| **Sport:** | **Tally:** | **Frequency:** |
| Soccer | lllll | 5 |
| Hockey | lll | 3 |
| Basketball | lllll lll | 8 |
| Football | lllll lllll ll | 12 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Favorite Sport** | | | |
|  | | | |
|  | | | |
|  | | | |
|  | | | |
| Soccer | Hockey | Basketball | Football |

Student Scoring Guide:

Each bar graphed accurately (1 point)

**Question 2** Standard: A1.DS.A.1 Blooms: Apply DOK: 1 Total Points: 7

Using the given data table, create a histogram to display the data in the space provided below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age at Inauguration** | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 |
| **U.S. Presidents** | 2 | 7 | 13 | 12 | 7 | 3 |

|  |
| --- |
| **Age of Presidents Histogram** |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 |   **Age at Inauguration**  **Number of Presidents** |

Student Scoring Guide:

Each bar graphed accurately (1 point each)

Vertical Axis scale appropriate (1 point)

**Question 3** Standard: A1.DS.A.2 Blooms: Analyze DOK: 2 Total Points: 3

Analyze the data distributions below and categorize them appropriately:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Circle one (1 point): Circle one (1 point): Circle one (1 point):

Negatively Skewed Negatively Skewed Negatively Skewed

Symmetrical Symmetrical Symmetrical

Positively Skewed Positively Skewed Positively Skewed

**Question 4** Standard: A1.DS.A.2 Blooms: Analyze DOK: 2 Total Points: 3

Analyze the Box and Whisker plots below and categorize them appropriately:

Circle one (1 point): Circle one (1 point): Circle one (1 point):

Negatively Skewed Negatively Skewed Negatively Skewed

Symmetrical Symmetrical Symmetrical

Positively Skewed Positively Skewed Positively Skewed

**Question 5** Standard: A1.DS.A.1 Blooms: Remember DOK: 1 Total Points: 5

Annotate the Box and Whisker plots (*fill in blanks*) below as prompted (1 point each):

**Question 6** Standard: A1.DS.A.3 Blooms: Analyze DOK: 2 Total Points: 3

Analyze the graphics below and **draw a line** between them to indicate which box and whisker plot corresponds to which histogram:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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**Question 7** Standard: A1.DS.A.3 Blooms: Apply DOK: 1 Total Points: 4

Given the following data set, find the “Mean”, “Median”, “Mode”, and “Range” of the data as listed:

Data Set = 13, 5, 8, 12, 7, 4, 5, 8, 14, 11, 13, 8

|  |
| --- |
| Show ALL work here:  **Answers:** Mean = \_\_\_\_\_\_\_\_\_\_ Median = \_\_\_\_\_\_\_\_\_\_ Mode = \_\_\_\_\_\_\_\_\_\_ Range = \_\_\_\_\_\_\_\_\_\_ |

**Question 8** Standard: A1.DS.A.3 Blooms: Apply DOK: 1 Total Points: 2

Continuing our analysis of the above Data Set, find the “Standard Deviation” of the data as listed:

|  |
| --- |
| Show ALL work here:  **Answer:** Standard deviation = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Question 9** Standard: A1.DS.A.2 Blooms: Analyze DOK: 2 Total Points: 6

Staying with our previously analyzed data set, if ALL members of the set were increased by 7, list the new values for “Mean”, “Median”, “Mode”, “Range”, and “Standard Deviation”.

Original Data Set = 13, 5, 8, 12, 7, 4, 5, 8, 14, 11, 13, 8

New Data Set (1 point) = \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_ , \_\_\_

|  |
| --- |
| Show ALL work here:  **Answers:** Mean = \_\_\_\_\_ Median = \_\_\_\_\_ Mode = \_\_\_\_\_ Range = \_\_\_\_\_ Standard deviation = \_\_\_\_\_ |

**Question 10** Standard: A1.DS.A.3 Blooms: Analyze DOK: 2 Total Points: 5

Looking again at our original Data Set (listed below), if an outlier of 550 were added to the list, which is more significantly impacted by its addition, the “mean” or the “median”? Explain your reasoning

Original Data Set = 13, 5, 8, 12, 7, 4, 5, 8, 14, 11, 13, 8, \_\_\_\_\_

Show ALL work here:

|  |
| --- |
| Show ALL work and rationale here (2 points):  **Answer:** (one point) Circle your choice: Mean Median |

**Question 11** Standard: A1.DS.A.3 Blooms: Analyze DOK: 3 Total Points: 7

Calculate the “5 Number Summary” of the “Original Data Set” as shown in the previous question… Create the statistically appropriate graphic to display your answers below.

|  |
| --- |
| Create graphic with annotations here (1 point ): **Answers:** (one point each)  Value 1:  Value 2:  Value 3:  Value 4:  Value 5: |

**Question 12** Standard: A1.DS.A.3 Blooms: Apply DOK: 2 Total Points: 11

Janelle conducted a survey for the Prom Committee regarding possible student attendance. She found that sixty-six juniors replied to the survey, with 32 saying they would be attending. Of the 86 seniors she surveyed 46 said they would be attending. Organize the GIVEN data into the table given below:

a) Fill in the “joint frequencies” (1 point each)

|  |  |  |  |
| --- | --- | --- | --- |
| **Class** | **Attending** | **Not Attending** | **Totals** |
| Juniors |  |  |  |
| Seniors |  |  |  |
| **Totals** |  |  |  |

b) Fill in the “marginal frequencies” with ALL of the calculated data (1 point each)

|  |
| --- |
| Show ALL work here (2 points): |

c) Calculate the “sum of marginal frequencies”, being the lower right corner field (1 point)

**Question 13** Standard: A1.DS.A.3 Blooms: Analyze DOK: 2 Total Points: 6

Analyzing the completed Two-Way Data Table above, answer the following questions (1 point each):

1. How many students responded to the survey? **Answer:** \_\_\_\_\_\_\_\_\_
2. How many students surveyed are attending Prom? **Answer:** \_\_\_\_\_\_\_\_\_
3. How many juniors surveyed are not attending Prom? **Answer:** \_\_\_\_\_\_\_\_\_
4. How many seniors surveyed are attending Prom? **Answer:** \_\_\_\_\_\_\_\_\_
5. What does each of the “joint frequencies” represent?

**Answer:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What does each of the “marginal frequencies” represent?

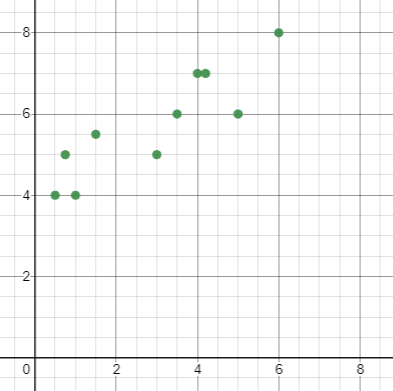
**Answer:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Why is the yellow field “sum of the marginal frequencies” the same for both the row sum and the column sum?

**Answer:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 14** Standard: 8.DSP.A.2 Blooms: Analyze DOK: 2 Total Points: 2

Which **Regression** best describes the given Scatter Plot below:

Circle one (1 point):

a) Cubic

b) Quartic

c) Quadratic

d) Logistic

e) Linear

Does this line have a positive correlation or a negative correlation?

Circle one (1 point):

a) Negative

b) Positive

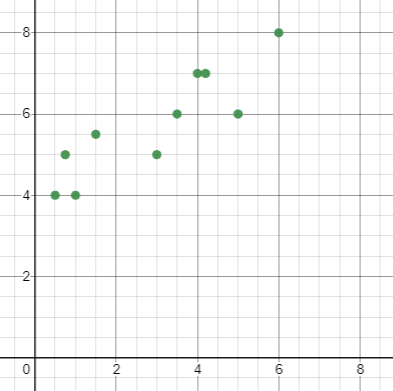
a) Horizontal

b) Linear

**Question 14** Standard: 8.DSP.A.3 Blooms: Apply DOK: 2 Total Points: 3

Assuming the bivariate data shown below has a “Best Fit” line that goes through points 1 and 2, answer the following questions (1 point each):

a) What is the “slope” of the line of best fit?



Point 1

Point 2

|  |
| --- |
| Show ALL work here: |

**Answer** (1 point): m = \_\_\_\_\_\_\_\_

b) What is the “equation” of the line of best fit?

**Answer** (1 point): y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| Show ALL work here: |

c) Graph the line of best fit onto the scatter plot:

(1 point)