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| **STATISTICS AND PROBABILITY**  **STUDY GUIDE, Page 1** |

1. **Xiomara is writing a report about rainbows and needs to gather data from her classmates.**

**Which is a statistical question Xiomara could ask?**

1. **What are the colors of the rainbow?**
2. **When was the first rainbow seen?**
3. **Is there really a pot of gold at the end of the rainbow?**
4. **How many rainbows have you seen this month?**
5. **Where in the sky was the rainbow located?**
6. **How long did the rainbow last?**
7. **Which color is most visible in the rainbow?**
8. **A survey was taken of how many magazines are purchased annually. The results are in this set of data.**

**1, 2, 3, 4, 4, 5, 5, 5, 5, 6, 6, 7, 12, 36, 104**

**Which is the most representative measure of center for this data?**

**A) Median C) Mean**

**B) Range D) Interquartile Range**

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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 2** |

1. **Terrence is interested in finding the average quiz grade for all the 10-point quizzes he took in Mr. Miller’s History class.**

**9, 10, 7, 5, 8, 7, 6**

**Part A: Which measure would be most accurate?**

**A) Median C) Mean**

**B) Range D) Mode**

**E) Interquartile Range E) Outlier**

**Part B: Identify the mean, mode, median, and range**

**Part C: Is there any outlier? Why or why not?**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **What is the interquartile range of the following data?**

**4, 4, 10, 11, 15, 7, 14, 12, 6**

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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 3** |

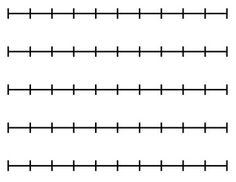
1. **A statistical question anticipates variability in the data related to it. Determine whether each question can be classified as a statistical question. Select yes of no for each question.**

|  |  |  |
| --- | --- | --- |
| **QUESTION** | **YES** | **NO** |
| **1. How many hours a week do people exercise?** |  |  |
| **2. How many hours are there in a day?** |  |  |
| **3. How often do you have dessert in a week?** |  |  |

**6. Consider this data set.**

|  |  |  |  |
| --- | --- | --- | --- |
| **10** | **11** | **12** | **11** |
| **9** | **8** | **9** | **9** |
| **11** | **9** | **8** | **7** |

**Click above the number line to create a dot plot for the data set.**

****

**6**

**7**

**14**

**8**

**9**

**10**

**11**

**12**

**13**

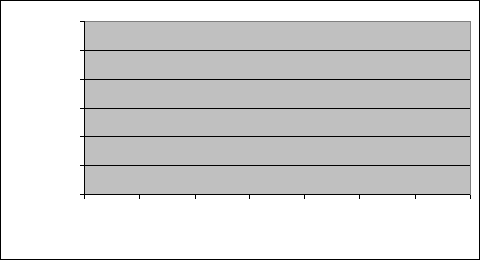
**7**

|  |
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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 4** |

**7. Consider this data set.**

|  |  |  |  |
| --- | --- | --- | --- |
| **10** | **7** | **12** | **11** |
| **13** | **8** | **14** | **9** |
| **4** | **9** | **8** | **7** |

**Click within the graph area to create a histogram for the data set.**

****

**6**

**5**

**TIMES APPEARING**

**4**

**3**

**2**

**1**

**0**

**12-15**

**8-11**

**4-7**

**NUMBERS IN SET**

1. **What is the mean price of an individual avocado over the past several months given the data below?**

**$1.69, $2.99, .99¢, $1.99, $2.69**

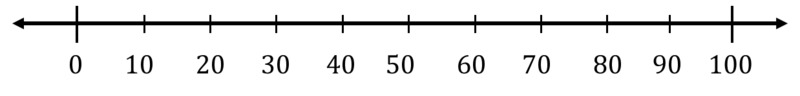
|  |
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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 5** |

1. **Frank surveyed his neighbors to see how much money they spent on gasoline each week. The results are in the dot plot shown.**

**.**

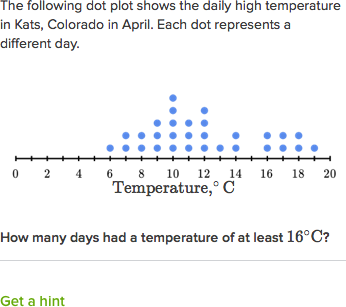
**. . .**

**. . . . . . .**

****

**Enter the total number of people Frank surveyed.**

1. **The following dot plot shows the daily temperature in San Pedro, California in January. Each dot represents a different day.**

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**How many days had a temperature of at least 12°C?**

|  |
| --- |
| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 6** |

1. **Elizabeth surveyed her friends to see how many minutes they studied for their math test last evening. The results are in this list.**

**10, 20, 5, 30, 12, 15, 25, 10**

**Enter the mode and median of the data.**

1. **The Principal at Leland, is interested in finding the average height of her culminating 6th graders. Create a histogram below with the given data in inches.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **INCHES** | **QUANTITY** | **INCHES** | **QUANTITY** | **INCHES** | **QUANTITY** |
| **47”** | **1** | **48”** | **0** | **49”** | **2** |
| **50”** | **0** | **51”** | **2** | **52”** | **4** |
| **55”** | **3** | **56”** | **4** | **57”** | **6** |
| **58”** | **2** | **59”** | **0** | **60”** | **1** |

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1. **- - - - - - - - - - - - - -- - - - - - - - - - - - - - - -**
2. **- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -**
3. **- - - - - -- - - - - - - - - -- - - - - - - - - - - - - - -**
4. **- - - - - - - - - - - - - - - - - - - -- - - - - - - - - - -**
5. **- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -**
6. **- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -**
7. **- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -**

**46 47 48 49 50 51 52 53 54 55 56 57 58 59 60**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 7** |

1. **Identify the measures of center, and explain why these terms are the measures of center.**

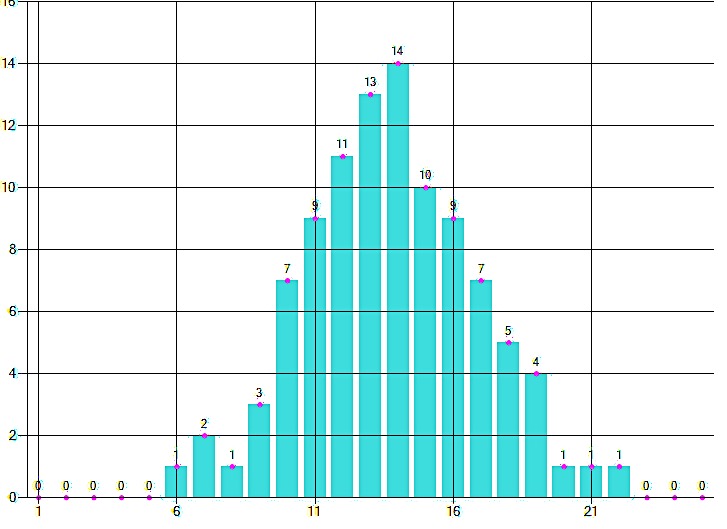
**A) interquartile range D) median**

**B) mean absolute deviation E) range**

**C) mode F) mean**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Consider the shape of this data:**

****

**Based on the**

**shape of the**

**data, which is**

**the most**

**representative**

**measure of**

**variation?**

**A) median D) mean**

**B) mean absolute deviation E) mode**

**C) interquartile range F) range**

|  |
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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 8** |

**16. Erick has been studying every night for his upcoming math test over the past 10 nights. The time spent on studying are listed below:**

**10, 15, 20, 15, 35, 5, 25, 20, 30, 25**

**Enter the mean of this data. \_\_\_\_\_\_**

**Enter the mode of this data. \_\_\_\_\_\_**

**Identify the first quartile. \_\_\_\_\_\_**

**Identify the third quartile. \_\_\_\_\_\_**

1. **Consider the data set below:**

|  |  |  |  |
| --- | --- | --- | --- |
| **10** | **5** | **12** | **11** |
| **13** | **5** | **14** | **7** |
| **7** | **10** | **6** | **3** |

**Enter the median of the data set. \_\_\_\_\_\_**

|  |
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| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 9** |

**17. Nicholas loves to eat Dodger dogs, and after tallying all the Dodger dogs he ate while attending games last year these are the results of dogs eaten per game:**

**6, 2, 5, 3, 7, 3, 4, 2, 5**

**Enter the mean absolute deviation. \_\_\_\_\_\_**

1. **Consider this data:**

**10, 11, 12, 9, 15, 9, 7, 4, 8**

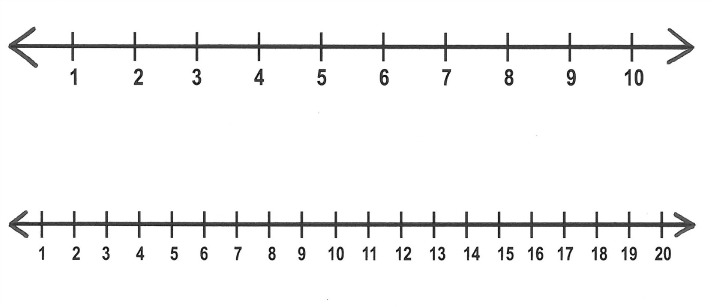
**Determine if each statement is true. Select true or false for each statement.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **STATEMENT** | | **TRUE** | **FALSE** | |
| **Changing the 4 to a 15 will increase the median** | |  |  | |
| **Changing the 4 to a 15 will decrease the range** | |  |  | |
| **Changing the 4 to a 15 will not change the mean** | |  |  | |
| **STATISTICS AND PROBABILITY STUDY GUIDE, Page 10** | | |

**18. Consider the data set below:**

|  |  |  |  |
| --- | --- | --- | --- |
| **10** | **11** | **12** | **11** |
| **5** | **8** | **9** | **13** |
| **13** | **14** | **7** | **9** |

**Draw a box plot to display the data set.**

****

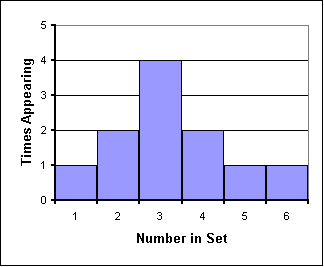
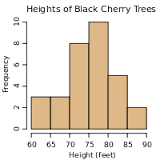
**19. What information can be ascertained from the box plot display? Use the box plot above to help explain your answer**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **STATISTICS AND PROBABILITY STUDY GUIDE, PAGE 11** |

**20. Consider the histograms below:**

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**Which histogram is more accurate? Explain why.**

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**In which histogram am I more likely to find an exact mean given the data set? Explain why.**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **STATISTICS AND PROBABILITY STUDY GUIDE, PAGE 12** |

1. **Consider the data on Michael Jordan’s and Kobe Bryant’s points per game average between the ages of 21 and 32:**

**Michael Jordan Kobe Bryant**

|  |  |  |  |
| --- | --- | --- | --- |
| **29** | **23** | **37** | **33** |
| **35** | **0** | **34** | **27** |
| **32** | **30** | **33** | **30** |

|  |  |  |  |
| --- | --- | --- | --- |
| **23** | **29** | **30** | **27** |
| **27** | **27** | **36** | **24** |
| **32** | **28** | **27** | **25** |

**Find the mean, median, mode, range, outliers if any, interquartile range, and mean absolute deviation**

**Based on the data set which player was the better scorer and give your analysis for that judgment.**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**