Data Analysis Review Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P. 44 – Common Core Investigations Teacher Guide

1. The dot plots show the lengths of time, to the nearest 10 minutes, some diners spent at dinner at each restaurant.

Dot plot on p. 30 of Grade 7 common core investigations

1. What comparisons can you draw from looking at the plots about the time diners spend having dinner at the restaurants?
2. What is the difference in the median value for each set of data?
3. For which set of data would you expect a greater interquartile range? Explain your answer.
4. Use the information given about the points that two basketball players scored in each of the games they played in this year

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Player A | 30 | 26 | 21 | 28 | 24 | 28 | 25 | 26 | 30 | 22 |
| Player B | 16 | 18 | 15 | 18 | 22 | 14 | 16 | 23 | 18 | 20 |

1. Find the mean number of points scored for each player. Find the difference in the means.
2. Find and compare the mean absolute deviation for each player.
3. How many times greater is the difference in the means than the mean absolute deviation for each player?
4. Would you expect there to be a lot of overlap in dot plots of the data? Why or why not?
5. Suppose the mean number of points scored for Player B were 25 points, and the variability stays the same.

Would you expect there to be a lot of overlap in a dot plot of the data? Why or why not?

1. Your mean quiz score is 15 points higher than your friend’s mean quiz score, which is 3 times the mean absolute deviation of both of your scores. Do you think there will be a lot of overlap if you make a double histogram of the data? Explain

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3. Tell whether the sampling method will result in a representative sample. Explain your reasoning.

a. Nicole is planning the games for a carnival for the first, second, and third graders at Bay Elementary School. To find out which games students would like to have, she asks 25 first graders during their lunch.

b. Mr. Williams is deciding what books to offer for the next book club for his 7th and 8th grade English classes. He randomly asks ten students from each of his classes to make their choices from three different books.

c. A city is surveying its residents to find out if an open space should be developed into a park or an office building. The city sends surveys to 100 randomly-selected residents of the city.

d. Alyssa is doing research for a report about the after-school activities of students at her school. She interviews every fifth student entering the gym after school.

4. The following table represents the weight (in pounds) of offensive lineman for each of the college teams. Use the table to answer the questions.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Alabama |  |  |  | X  x |  | x | x |  | X  X  X  x |  | X  x | X  x | X  X  x | x | x |  |  | X  x |
| Mount Union | X  X | x | X  x |  | X  x |  | X  x |  | X  x | x | X  X  x |  | x | x |  |  |  |  |
|  | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 |

1. What is the difference in median values for each set of data?
2. What comparison can you draw from looking at the plots about the weight of offensive lineman?
   1. Which group appears to have a larger average weight?
   2. Which group appears to have greater variability?
3. Find the mean of each group. How does this support/not support one of the questions from part b?
4. Compute the mean absolute deviation (MAD) for each group. How does this support/not support one of the questions from part b?
5. How many of the Alabama athletes are larger in weight than largest Mount Union player?
6. Imagine that a high school student wants to attend one of these colleges, which college do you think would most likely accept him if he weighed 265 pounds? Explain your reasoning.

5. Carrie, a new student at the school, wants to buy a device to use in class. She has been observing people around the school and her classroom to help her make a decision on which device seems to be the most popular. There are 680 students in Carrie’s school. For these questions, expect that every student has a device.

a. Before school in the cafeteria (where everyone is supposed to report before the first bell rings), Carrie notices that 42 people have iPads, 16 have laptops, and 60 have phones. How many phones can Carrie expect her whole school to have if she uses this data?

b. She notices that 4 people in her class use an iPad, 10 people use their phones, and 6 people use laptops. Based on this information, how many of the students in her whole school use an iPad?

c. If Carrie plans on buying the most popular device at her school, which device would she choose and explain why?