**Chicago Bulls**

The data below is from the Chicago Bulls basketball team. The table shows the total points scored and the total minutes played by a sample of players in the 1987 – 1988 National Basketball Association season.



|  |  |  |
| --- | --- | --- |
| Player | Minutes Played | Total Points |
| Brown | 591 | 197 |
| Corzine | 2328 | 804 |
| Grant | 1827 | 622 |
| Jordan | 3311 | 2868 |
| Oakley | 2816 | 1014 |
| Paxton | 1888 | 640 |
| Pippen | 1650 | 625 |
| Sellers |  2212 | 777 |
| Sparrow | 1044 | 260 |
| Vincent | 1501 | 573 |

1. Create a scatterplot showing the total minutes played and total points scored for the sample of players in the coordinate plane above. Does there appear to be an outlier? If so, what player represents the outlier?
2. Find the line of best fit and the correlation coefficient, *r*. Plot the regression line on your scatterplot.

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Correlation coefficient, *r* = \_\_\_\_\_\_\_\_\_

1. Interpret the strength and direction of the correlation coefficient. Using the *r*-value, how well does the equation represent the data?
2. Suppose you remove the point (3311, 2868) from the data set and recalculate the regression line. What do you expect will happen to the regression line?
3. Remove (3311, 2868) and create a new scatter plot. Recalculate the correlation coefficient and the line of best fit. Plot the regression line on the graph.



Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Correlation coefficient, *r* = \_\_\_\_\_\_\_

1. Interpret the strength and direction of the correlation coefficient. Using the *r*-value, how well does the equation represent the data?
2. What effect did the outlier have on the regression equation? What effect did the outlier have on the correlation coefficient?
3. If you were going to use an equation to predict a player’s total points based on the number of minutes played, which regression equation would be a more accurate representation for most players on this team? Why?
4. Using the equation from question 8, interpret the real-world meaning of the slope and the real-world meaning of the *y*-intercept.
5. Using the equation from question 8, calculate and interpret the *x*-intercept. Is this an example of interpolation or extrapolation?
6. Using the equation from question 8, predict the total points for a player who has 3500 minutes of playing time. Is this an example of interpolation or extrapolation?
7. Using the equation from question 8, calculate the playing time for someone who has scored a total of 2000 points. Is this an example of interpolation or extrapolation?