

Name _____ Date _____

We're Playing Basketball!

The NBA keeps a record of the all-time top scorers. Many of the NBA players on the list below have had great rookie seasons. Is it possible to predict the overall points at the end of a player's career based on their rookie season? Below is a list of some of the players on the top scorer list.

| Professional Player | Rookie Season-Points made during first year of career | Overall Points-Points made throughout entire career |
|---------------------|---|---|
| Gary Payton | 588 | 21,813 |
| Robert Parrish | 697 | 23,334 |
| Reggie Miller | 822 | 25,279 |
| Jerry West | 1389 | 25,192 |
| Dominique Wilkins | 1434 | 26,668 |
| Hakeem Olajuwon | 1692 | 26,946 |
| Elvin Hayes | 1725 | 26,314 |
| Shaquille O'Neal | 1893 | 28,596 |
| Michael Jordan | 2313 | 32,292 |
| Kareem Abdul-Jabbar | 2361 | 38,387 |

[NBA.com/Stats | All Time Leaders](https://www.nba.com/stats/all-time-leaders)

Part 1

Use the data to make predictions to determine the relationship between the points earned in a player's rookie season and the overall points earned in the career.

1. Create a scatter plot with the data in the chart above.
2. Would you use a linear or quadratic model to represent the data? Explain your reasoning for choosing your model.
3. Determine the equation of the curve of best fit that best models the data.
4. Using the equation of the curve of best fit, predict the amount of overall points LeBron James will have at the end of his career based on his rookie season total of 1,654 points. Do you believe this is a good prediction? Why or why not?

Algebra I Task

5. For a player to surpass Kareem Abdul-Jabbar, as the all-time score leader, he would need close to 40,000 points. How many points would the model show them scoring in their rookie season?

6. Do you believe your curve of best fit is a good representation of the data? Why or why not?

Part 2

Go to [NBA.com/Stats | All Time Leaders](https://www.nba.com/stats/all-time-leaders) and select a player not on the list above to add his scoring statistic to your data. (Once you choose a player and identify their all-time points, click on the individual's name, and change the Per Mode to Totals to see their total points for the rookie season).

- a. Make a prediction on how the new player will affect the data.
- b. How does this player's data affect the equation of the curve of best fit? Is the new equation of the curve of best fit a good representation of the data? Why or why not?
- c. Based on the results of your new equation, what conclusion about a player's career total points can you make based off a player's rookie season total points?