Impact of a Superstar

Coaches and sportswriters always talk about the importance of playing as a team.
The 2004-05 Detroit Pistons are often credited as the epitome of the team concept, with no player trying to outperform his teammates.
"We are a team that truly embodies what team is about. We're unselfish," said Piston Chauncey Billups[1]

 Many credit the Pistons' unselfish style as the reason they won the NBA Championship in 2005.

On the other hand, detractors have branded Kobe Bryant as a selfish, egotistic player who pads his own achievements at the expense of his team[2].
David M. Carter of the Sports Business Group consulting firm in Los Angeles said of Bryant, "There is no 'I' in team, but he makes you think there might be a bunch of 'I's in Kobe… to many, I think he personifies the current-day ballplayer — self-centered, greedy and coming across as having a sense of entitlement.[3]"

In this activity, you will compare these two teams to see what impact a superstar player has on his team's statistics.

The following tables show only those players who, on average, played more than 20 minutes per game. Roughly speaking, these players would be considered the "starters" on each team

Los Angeles Lakers, 2004 - 2005

Player	Games	Points	Minutes
Kobe Bryant	66	1819	2689
Caron Butler	77	1195	2746
Chucky Atkins	82	1115	2903
Lamar Odom	64	975	2320
Chris Mihm	75	735	1870
Jumaine Jones	76	577	1830

Detriot Pistons, 2004-05

Player	Games	Points	Minutes
Tayshaun Prince	82	1206	3039
Richard Hamilton	76	1424	2926
Chauncey Billups	80	1316	2866
Rasheed Wallace	79	1145	2687
Ben Wallace	74	721	2671
Antonio McDyess	77	740	1797
Calos Arroyo	70	461	1448

1. Make a scatter plot in your TI83/84 of the points vs time for the LA Lakers points on the horizontal and time on the vertical axis). Describe any patterns that you notice. (direction, strength)

2. Find the equation of the line of best fit and the correlation coefficient.
a. What is the slope of your line? What does the slope of your line represent?

b. What is the y-intercept of your line? What does the y-intercept represent?

c. What is the r-value for the line of best fit that approximates the data for the Lakers? Is the correlation significant? Explain what this value means in regards to the data entered.

3. Remove the data for Kobe Bryant from the list and make a new scatterplot along with the equation of the line of best fit and correlation coefficient.
a. How does the line of best fit change?

b. How does the r-value change?

c. Explain the changes to the line of best fit and r-value in the context of this problem. That is, how do the points and minutes of Kobe Bryant compare to the rest of the players on the Lakers?

4. a) Remove each player at a time. Write the equation of the line of best fit and the correlation coefficient in the table below.

	Equation of the line	Correlation coefficient
Kobe Bryant		
Caron Butler		
Chucky Atkins		
Lamar Odom		
Chris Mihm		
Jumaine Jones		

b. Does the removal of data for other players have the same effect as the removal of the data for Bryant?

c. Do these results suggest that Kobe Bryant is "selfish," as some sportswriters have claimed? What other conclusion might be drawn from these results?

d. For which set of data is the line of fit better—the set of data for all six Lakers, or the set of data for the five Lakers besides Kobe Bryant? Explain your answer.

5. Repeat this procedure using the data for the Detroit Pistons. First, find the line of best fit using the data for all seven players. Then, take turns removing the data for just one of the players. Explain any patterns that you notice. How are the results similar to or different from the results for the Lakers? Is there a "selfish" player on the Pistons?

	Equation of the line	**Correlation Coefficient**
Tayshaun		
Richard		
Chauncey		
Rasheed		
Ben		
Anotonio		
Carlos		

1 McCosky, Chris. "Pistons Add Team Concept." The Detroit News. Received 3 March 2006 from http://www.detnews.com/apps/pbcs.dll/article?AID=/20060219/SPORTS0102/602190377/1127.

2 "Kobe Bryant." Received on 3 March 2006 from http://www.answers.com/topic/kobe-bryant.

3 Dupree, David. "Like It Or Not, Kobe Bryant Shines." USA Today. Received on 3 March 2006 from

http://www.usatoday.com/sports/basketball/allstar/2006-02-15-bonus-cover-kobe_x.htm.