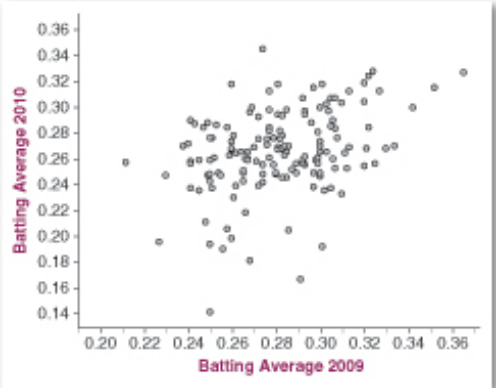
Name:_____ Date:_____ Period:_____ Code:_____

Chapter 10 Review

NEXT YEAR'S BATTING AVERAGE



To draft the best team for next year, we need to know how valuable a player will be in the upcoming season. Will using a player's performance from the previous season be a good way to predict his performance in the upcoming season? To answer this question, we will investigate the association between a player's batting average in 2009 and his batting average in 2010, using the 155 players who had at least 500 plate appearances in 2009.

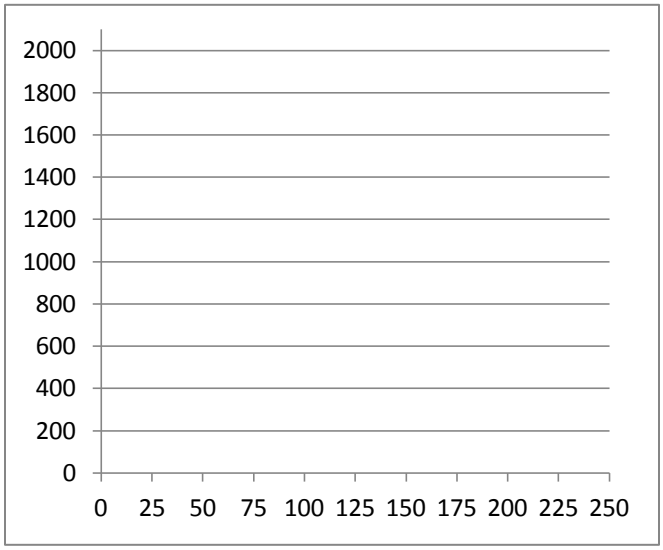
1.) Above is a scatterplot showing the relationship between a player's batting average in 2009 and his batting average in 2010. Describe the direction, form and strength of the association.

THE 2009-2010 LOS ANGELES LAKERS

The table shows the total number of personal fouls and total number of points scored for each member of the 2009-2010 Los Angeles Lakers basketball team.

Player	Fouls	Points
Kobe Bryant	187	1970
Pau Gasol	152	1190
Andrew Bynum	193	977
Lamar Odom	227	882
Ron Artest "Meta World Peace"	165	845
Shannon Brown	129	667
Derek Fisher	202	615
Jordan Farmar	109	591
Sasha Vujacic	67	185
Josh Powell	71	169
Didier Ilunga-Mbenga	17	74
Luke Walton	19	69

1.) Make a scatterplot for these data, using fouls as the explanatory variable. Describe what you see.



2.) Interpret the correlation between points and fouls. (Hint: r=0.77).

3.) Based on your previous answers, should coach Phil Jackson insist that low-scoring Luke Walton commit more fouls in an effort to increase his point production? If not, how might you explain the strong relationship between these two variables?

DEFENSE IN PAC-10 FOOTBALL

The following table shows the number of wins and number of points each team allowed its opponents to score during conference play for the members of the Pacific 10 college football conference in 2009.

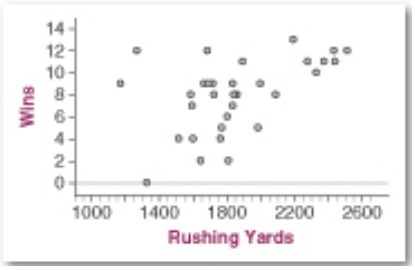
Team	Wins	Points Allowed
Oregon	8	204
Stanford	6	235
Oregon State	6	225
Arizona	6	228
USC	5	200
California	5	253
Washington	4	229
UCLA	3	217
Arizona State	2	216
Washington State	0	357

1.) Which variable, wins or points allowed, should go on the y axis? Explain.

2.) Make a scatterplot of these data and briefly describe what you see.

3.) The correlation value for this distribution is -0.65. Without doing any calculations, explain the effect Washington State has on the correlation.

IS A GOOD RUNNING GAME THE KEY TO WINNING IN THE NFL?



According to many television analysts, nothing is more important in the NFL than establishing a good running game. Is this true? Is there really a positive association between a team's rushing yards and wins in the NFL?

1.) The scatterplot shows the relationship between rushing yards and wins for the 32 NFL teams in the 2008 regular season. Describe what you see.

2.) The observed correlation for these data is r = 0.48. What information does this provide?

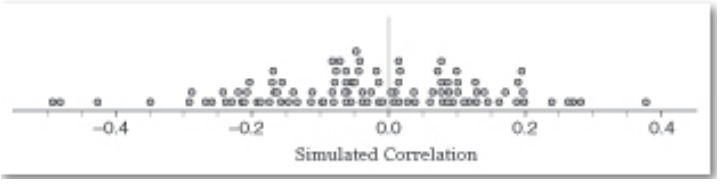
3.) What effect do the two teams in the upper left (Indianapolis, Arizona) have on the observed correlation? Explain.

4.) If you wanted to see whether the observed correlation of r = 0.48 provides convincing evidence that the true correlation between rushing yards and wins was positive, what hypotheses should you test?

5.) In this context, explain the difference between the observed correlation and the true correlation.

6.) Describe how to simulate the distribution of the correlation, assuming the true correlation is 0.

7.) Here are the results of 100 trials of the simulation. Use the results to estimate the p-value, interpret the p-value and make an appropriate conclusion.



8.) Does the positive association between rushing yards and wins mean that gaining lots of yards on the ground causes a team to win more games? Explain.