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In the 1980s, Bill James suggested a relationship between the runs scored and runs allowed by a team and the team's number of wins. This relationship, known as the Pythagorean Formula, is given by

$$\text{Winning Percentage} \approx \frac{(\text{Runs Scored})^2}{(\text{Runs Scored})^2 + (\text{Runs Allowed})^2},$$

which has been found to be a very good approximation of actual winning percentage. Combined with the great deal of statistical research in baseball that has focused on the number of runs that individual players generate on offense and prevent on defense, this formula can determine approximately how many wins any given player contributes to a team's overall record.

Further research has focused on applying this formula to other sports, and modifying the formula to increase accuracy in approximating winning percentage. However, we will investigate the use of this formula as a natural measure of team strength, and as a predictor of playoff success. (Received September 22, 2011)