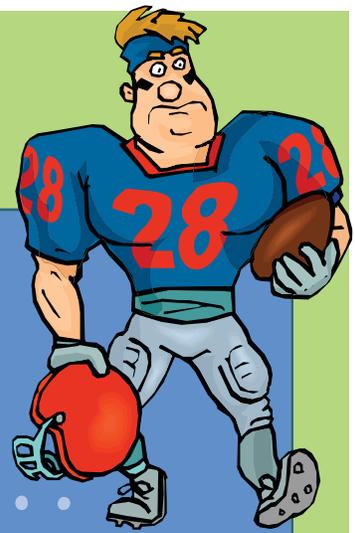


MATH MATTERS

Apply It.



The Math Behind STATISTICS IN SPORTS...

Some Math terms Used in Compiling Sports Statistics

Matrix Theory, Probability Theory, and Mathematical Analysis

Uses and Applications:

Statistics are used to determine team rankings and player ratings, to modify the rules of competition, and in sports reporting.

How it works:

Statistics are used in a variety of sports applications, although how they are used in each application is very different for each sport. For example, in college football not all teams play each other. There are hundreds of teams but each team may only play ten games and team A may beat team B who beats team C who beat team A. Thanks to mathematics there are ways to deal with these challenges and arrive at a national ranking system on which (almost) everyone can agree. See *The Mathematics of Ranking or Should Utah be Ranked in the Top 25* by J.P. Keener, <http://www.math.utah.edu/~keener/lectures/rankings.pdf>.

Interesting Fact:

The Bowl Championship Series (BCS) Standings include three components: USA Today Coaches Poll, Harris Interactive College Football Poll, and an average of six computer rankings. Each component counts one-third toward a team's overall BCS score. All three components are added together and averaged for a team's ranking in the BCS Standings. In the two polls, a team is evaluated on the number of voting points it receives in each poll. A team's score in each poll is its points in the poll divided by its total possible voting points (if 114 voters, then $2850 = 114 \times 25$). The number of actual voters, which can vary, is figured into the computation on a weekly basis in stating each team's percentage of a possible perfect score.



Society for Industrial and Applied Mathematics

www.siam.org

<http://www.siam.org/careers/matters.php>

siam.