

SPORTS QUESTIONS 1ST EDITION

Teaching Tips for Instructors



In this Sports Question Collection by instructor Anne Triplett you will find questions in Algebra, Precalculus, and Statistics related to the sports of football, baseball, basketball, hockey, soccer, cricket, track, and bowling. Below are a few of the author's recommendations for use.

For the Sports Enthusiast

I would first look at the algebra questions that work with win percentage estimators. These can be found in questions **ATSports1 1.1.005-1.1.006 and 1.2007**. I would also look at **ATSports1 3.2.001-3.2.004** that work with the distribution of runs scored in the remainder of an inning and the expected number of future runs. It is not mandatory that students understand baseball to do these problems, but a basic understanding will make the problems much more accessible.

For the Sports Novice

I recommend starting out with **ATSports1 1.1.001 – 1.1.005**. These questions ask the student to compute quarterback ratings using a formula. The questions are straightforward and do not require any knowledge of football. **ATSports1 1.1.005-1.1.006** involve computing win percentage estimators (wpe) and are also straightforward, but slightly more difficult because the formula involves an exponent.

For a little more algebra, try out **ATSports1 1.2.002**. This tutorial will guide the student through the process of comparing hitting performance for two players. Algebra skills are needed to determine percentages and also to compute slugging percentage by using a formula. Parts 4 and 5 of the tutorial get a bit more difficult because the student must first solve a proportion and then be able to use reasoning to

determine the greatest and least number of home runs that a player could have. This requires that the student understand that a hit in baseball must be a single (1B), a double (2B), a triple (3B) or a home run. After parts 4 and 5, the tutorial uses formulas. The questions in this tutorial are repeated in problems **ATSports1 1.2.002-1.2.006**.

Questions **ATSports1 1.3.001 – 1.3.002** explore using a weighted average to determine a basketball player's rating. The algebra is a straightforward use of a formula.

An interesting application of a rating is to determine a player's pay bonus. In **ATSports1 1.3.003**, the student uses percentages and proportions to compute the bonuses for four players. The algebra is straightforward in the problem, but it is a multi-step problem. Before assigning this problem to algebra students, be sure to review the fact that percentages of a whole must total 100%, and consequently the sum of the player's bonuses must equal the total amount of money that will be awarded.

For a fun problem that won't be familiar to most students, check out the problems related to calculating bowling scores: **ATSports1 1.5.001 – 1.5.004**. Some students may be tempted to set up a system of equations, but solving the problem is not that difficult. Encourage them to work from left to right and figure out each subscore.