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**Stanley Rothman\***, stanley.rothman@quinnipiac.edu, and **Alexander Everett**. *A theoretical approach for generating linear theorems to predict winning percentages for the teams in the mlb, nfl, nba and nhl at any point in a season.*

In a previous paper published in the Fall Edition, 2014 of The Baseball Research Journal, I presented an alternate formula to Bill James' Pythagorean Theorem of Baseball. His formula states a team's expected winning percentage  $EXP\ W\% = \frac{(\text{Runs Scored})^2}{(\text{Runs Scored})^2 + (\text{Runs Allowed})^2}$ . My original alternate formula called The Linear Formula for Baseball states a team's expected winning percentage  $EXP\ W\% = 0.000673 * (\text{Runs Scored} - \text{Runs Allowed}) + 1/2$ . I derived this linear formula using empirical data. Both these formulas were shown to accurately predict a team's actual winning percentage for a season. In my latest paper, recently submitted for publication in the above journal, I have developed a new theoretical approach for deriving four new linear formulas for the MLB, NBA, NFL and NHL. This new theorem allows me to compare the four formulas for the four leagues. In my presentation, I will prove this new theorem and then show how easy it is to produce these four new linear formulas. I will explain why these four formulas differ and demonstrate that each of these formulas accurately predict a team's actual season winning percent in all four leagues. I will introduce a new metric to determine which teams are over performing or under performing at any point in a season. (Received July 16, 2016)