# Elo Ratings in Football

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#### Abstract

This is the abstract. Elo!

### 1 Background

Elo ratings take 2 rating inputs for a match-up and an input result and calculate new Elo ratings for the teams in question.

In this implementation, each team receives an initial Elo rating of 1500. The possible results are  $\in \{0, 0.5, 1\}$  representing a loss, draw, and win, respectively.

## 2 Equations

$$Q_a = 10^{R_a/400}$$

$$Q_b = 10^{R_b/400}$$

$$Ea = \frac{Q_a}{Q_a + Q_b}$$

$$Eb = \frac{Q_b}{Q_a + Q_b}$$