

$$gain = 2g \left( 1 - \frac{1}{1 + 10^{\left( \frac{theirRank - yourRank}{4000} \right)}} \right), \quad g = \begin{cases} 50 & \text{if } 0 \leq yourRank < 1000 \\ 40 & \text{if } 1000 \leq yourRank < 2000 \\ 20 & \text{if } 2000 \leq yourRank < 3000 \\ 15 & \text{if } 3000 \leq yourRank < 4000 \\ 8 & \text{if } 4000 \leq yourRank < 4500 \\ 7 & \text{if } 4500 \leq yourRank < 5000 \\ 6 & \text{if } 5000 \leq yourRank < 5500 \\ 5 & \text{if } 5500 \leq yourRank < 6000 \\ 4 & \text{if } 6000 \leq yourRank < 6500 \\ 3 & \text{if } 6500 \leq yourRank < 8000 \end{cases},$$

$totalgain = \text{sum of gains per each opponent beat}$

$$loss = -2sl \frac{1}{1 + 10^{\left( \frac{winnerRank - yourRank}{4000} \right)}}, \quad s = \begin{cases} 1 & \text{if hardloss} \\ 0.2 & \text{if softloss} \end{cases}, \quad l = \begin{cases} 5 & \text{if } 0 \leq yourRank < 1000 \\ 15 & \text{if } 1000 \leq yourRank < 2000 \\ 18 & \text{if } 2000 \leq yourRank < 3000 \\ 15 & \text{if } 3000 \leq yourRank < 4000 \\ 8 & \text{if } 4000 \leq yourRank < 4100 \\ 9 & \text{if } 4100 \leq yourRank < 5000 \\ 8 & \text{if } 5000 \leq yourRank < 5500 \\ 7 & \text{if } 5500 \leq yourRank < 6000 \\ 6 & \text{if } 6000 \leq yourRank < 7000 \\ 19/3 & \text{if } 7000 \leq yourRank < 7100 \\ 20/3 & \text{if } 7100 \leq yourRank < 7200 \\ 7 & \text{if } 7200 \leq yourRank < 7300 \\ 22/3 & \text{if } 7300 \leq yourRank < 7400 \\ 23/3 & \text{if } 7400 \leq yourRank < 7500 \\ 8 & \text{if } 7500 \leq yourRank < 7600 \\ 25/3 & \text{if } 7600 \leq yourRank < 7700 \\ 26/3 & \text{if } 7700 \leq yourRank < 7800 \\ 9 & \text{if } 7800 \leq yourRank < 7900 \\ 28/3 & \text{if } 7900 \leq yourRank < 8000 \\ 29/3 & \text{if } yourRank = 8000 \end{cases}$$

$giveup = \text{avg loss of each opponent 's individual loss formula}$

$DC = 1.5 \text{ giveup}$