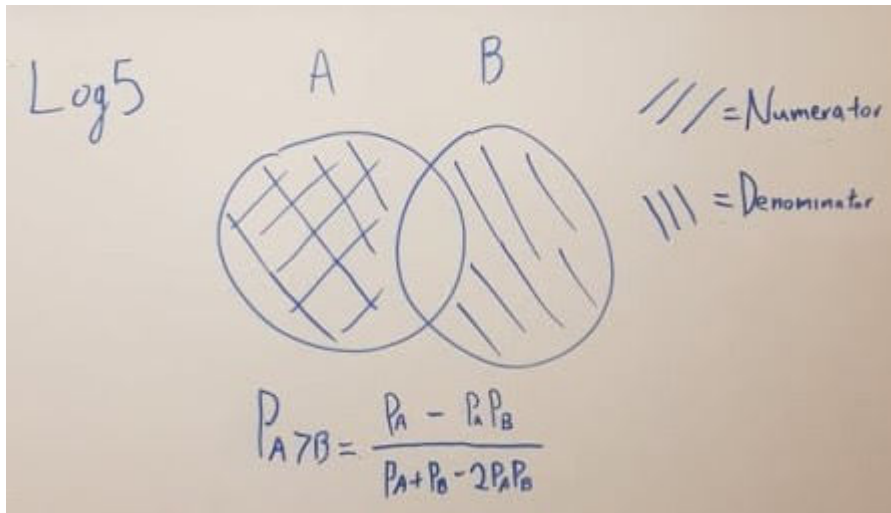


Predictions with the Log5 Formula

The [Log5](#) formula returns the probability that **Team A** will win the game against **Team B** based on teams' win rate. The Log5 formula is:

$$P_{A>B} = \frac{P_A - P_A \times P_B}{P_A + P_B - 2 \times P_A \times P_B}$$



A few notable properties exist:

- If $P_A=1$, Log5 will always give A a 100% chance of victory.
- If $P_A=0$, Log5 will always give A a 0% chance of victory.
- If $P_A=P_B$, Log5 will always return a 50% chance of victory for either team.
- If $P_A=0.5$, Log5 will give A a $1-P_B$ probability of victory.

In order to calculate the probabilities using the Log5 formula, we need to take into consideration the home and the away. A good approach is to take the following weights:

- 60% by taking into account the Home and Away Win Rate
- 30% by taking into account the Overall Win Rate
- 10% by taking into account the Last 10 Games Win Rate

Let's get these [Win Rates](#):

- Portland Home = 14-7 (66.6%); Dallas Away = 10-10 (50%)
- Portland Total = 25-21 (61%); Dallas Total = 21-19(52.5%)
- Portland Streak = 7-3 (70%); Dallas Streak = 6-4 (40%)

Now we are ready to calculate the Probability of Portland defeating Dallas

$$Por_Home = 14/21$$

$$Dal_Away = 10/20$$

$$Por_Total = 25/41$$

$$Dal_Total = 21/40$$

$$Por_Streak = 7/10$$

$$Dal_Streak = 6/10$$

```
log5<-function(home, away) {
```

```
  prob<-(home-home*away)/(home+away-2*home*away)
```

```
  prob
```

```
}
```

```
prob<-0.6*log5(Por_Home,Dal_Away) + 0.3*log5(Por_Total,Dal_Total) +
```

```
0.1*log5(Por_Streak,Dal_Streak)
```

```
prob
```

Output:

```
[1] 0.6365786
```

So, according to our logic the weighted Log5 the probability of **Portland to Win the game is 63.65%**.