# **Probability Logic**

If I have 1000 tweets and 100 of these contain a hashtag, then the probability of a tweet containing a hashtag is:

If I have 10 different hashtags, A to J which occur with the following probabilities, if a tweet contains a hashtag:

Then, the probability of a tweet containing hashtag #A is given by the product rule:

The probability of a tweet containing hashtags #A and #B, is also given by the product rule:

Which resolves to:

The next step is to

*I make an assumption in all probabilities can be calculated ‘with replacement’, namely the probability of choosing a hashtag is not dependent on whether it is chosen first or chosen second, third or fourth. I make this assumption because there isn’t a fixed number of hashtags a tweeter is limited to.*