

The information contained in non-uniform distributions



- State the formula for the information contained in a non-uniform probability distribution, p and explain the final steps involved in going from the formula $I(p \otimes q) = I(p) + \sum_i p_i I(w_i)$ to this result.

- A three sided spinner has edges labeled 1, 2 and 3 and an equal probability of landing on each of its three sides. Calculate the information contained in the associated probability distribution.

- Now suppose that the spinner has a probabilities of $\frac{1}{7}$, $\frac{2}{7}$ and $\frac{4}{7}$ of coming up with a 1, 2 or a 3 respectively. Calculate the information contained in the associated probability distribution.

- Now suppose that 1 never comes up and that the probabilities of 2 and 3 are equal to $\frac{4}{7}$ and $\frac{3}{7}$ how much information is contained in this distribution.