
Quiz 1 Equation Sheet

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Contents

$$p(a) = \frac{|a \cap S|}{|S|}$$

$$p(a|b) = \frac{|a \cap b \cap S|}{|b \cap S|}$$

$$\sum_b p(a \cap b) = p(a)$$

$$p(X_1, X_2, X_3, \dots, X_n) = p(X_1)p(X_2|X_1)p(X_3|X_1, X_2) \cdots p(X_n|X_1, X_2, \dots, X_{n-1})$$

$$p(H|O) = \frac{p(O|H)p(H)}{\sum_H p(O|H)p(H)}$$

$$\log(p_1 + p_2) = \log p_1 + \log(1 + \exp(\log p_2 - \log p_1))$$

binomial distribution

$$p(m|\theta, n) = \binom{n}{m} \theta^m (1 - \theta)^{n-m}$$

poisson distribution

$$p(k|\lambda) = e^{-\lambda} \frac{\lambda^k}{k!}$$