Assorted Probability Notes

- $P(A \wedge B) = P(A) \cdot P(B|A) = P(B) \cdot P(A|B) \rightarrow P(B|A) = P(A|B) \cdot \frac{P(B)}{P(A)}$

- if f is the probability density function associated with an event x, then P(x occurs by time t) $\int_0^t f(x)dx$.

- if P, Q are the probabilities for events x and y happening by a particular time [that is $P(t)$ is the probability that x happens by time t, and $Q(t)$ is the probability that y happens by t], and if $P(t) = kQ(t)$ for all $t < T$, then $f_x = kf_y$ for all $t < T$ where f_x is the probability density function for event x and f_y is the probability density function for event y.