Formulas:

Normal Distribution Function

$$f(x;\mu,\sigma^2) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}(\frac{x-\mu}{\sigma})^2}$$

Message Probability
$p(m) = \sum_{t\in S} p(m,t)$

Prior Probability
$p(s) = \sum_{m\in M} p(m,s)$

Likelihood
$p(m|s) = \frac{p(m,s)}{p(s)}$

$p(m,s) = p(m|s)p(s)$

Posterior
$p(s|m) = \frac{p(m,s)}{p(m)}$

Bayes

$$p(s|m) = \frac{p(m|s)p(s)}{p(m)}$$

or

$$p(s|m) = \frac{p(m|s)p(s)}{\sum_{t\in S} p(m|t)p(t)}$$

Arrow Pratt Absolute Risk Aversion:

$$A(c) = -\frac{u''(c)}{u'(c)}$$

Arrow Pratt Relative Risk Aversion:

$$R(c) = cA(c) = \frac{-cu''(c)}{u'(c)}$$

Poisson Process:

$$p(n|\lambda) = \frac{\lambda^n e^{-\lambda}}{n!} \quad \lambda = rate \quad n = number$$

Definitions:

Certainty Equivalence:

$u\big(c(F,u)\big) = \int u(x)dF(x)$

$P * U(a) + (1-P)U(b) = U(c)$

1st Order Stochastic Dominance (example):

$F(s) \geq G(s)\ \ \forall s$ (F and G are CDF's)

2nd Order Stochastic Dominance (example):

$$\int_{-\infty}^{s} F(t)dt \geq \int_{-\infty}^{s} G(t)dt \quad \forall s$$

IFF F is a mean-preserving spread of G.

Gross Value of Information:

$$\sum_{m\epsilon M} p(m) \sum_{s\epsilon S} p(s|m)(w(a^*(m),s) - w(\hat{a},s)) \geq 0$$

Best Response:

$s_i \in S_i$ is a best response to $s_{-i} \in S_{-i}$ if
$u_i(s_i,s_{-i}) \geq u_i(t_i,s_{-i})\ \forall t_i \in S_i$

Nash Equilibrium:

$s^* = (s_1^* \ldots s_n^*)$ is a Nash Equilibrium if s^* is a Best Response to s_{-i}^* $\forall i$