Mean probability distribution:

$$\mu = \sum [x \cdot p(x)]$$

Variance probability distribution:

$$\sigma^2 = \sum [x^2 \cdot p(x)] - \mu^2$$

Standard Deviation probability distribution:

$$\sigma = \sqrt{\sum [x^2 \cdot p(x)] - \mu^2}$$

Binomial distribution:

$$P(x) = nCx \cdot p^x \cdot q^{n-x} \quad \text{where} \quad q = 1 - p \quad \text{and} \quad nCr \text{ on calculators is } nCr \quad or = \frac{n!}{r!(n-r)!}$$

Mean (binomial distribution):

$$\mu = n \cdot p$$

Variance (binomial distribution):

$$\sigma^2 = n \cdot p \cdot q$$

Standard Deviation (binomial distribution):

$$\sigma = \sqrt{n \cdot p \cdot q}$$

Normal Distribution:

$$z = \frac{x - \mu}{\sigma}$$

Solving for x: $\quad x = \mu + z \cdot \sigma$

Normal Distribution (Central Limit theorem), for sample size n:

$$z = \frac{x - \mu}{\sigma/\sqrt{n}}$$