NORMAL PROBABILITY DISTRIBUTION $N(\mu, \sigma)$

$\mu =$ mean
$\sigma =$ standard variation

$$\mu = np$$
$$\sigma = \sqrt{npq}$$

Normal Distribution can be used to approximate The Binomial Distribution when:

$np > 10 \quad \text{and} \quad nq > 10 \quad \text{or} \quad [\mu - 3\sigma, \mu + 3\sigma] \subset [0, n]$

Calculating the z-score (standard score)

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

Ref: http://www.unisanet.unisa.edu.au/Resources
Rules of thumb

Probability of the z-score being in a particular interval equals the area under the normal curve. Although the figures below show the standard normal curve, the same probabilities are true for any normal curve with the mean $\mu$ and the standard deviation $\sigma$.

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