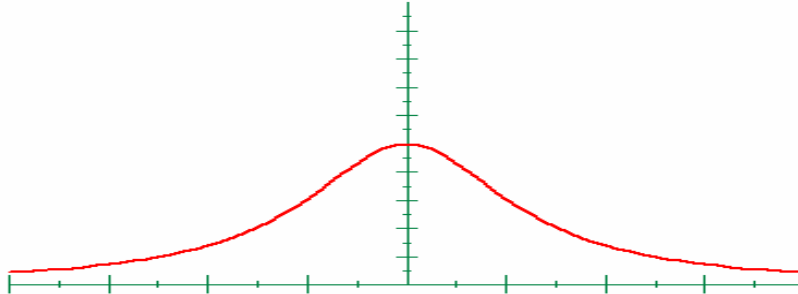


**Normal Distribution**  
***Approximation of a***  
**Binomial Distribution:**



- 1) Verify that  $np \geq 5$  and  $nq \geq 5$
- 2) Find  $\mu = np$  and  $\sigma = \sqrt{npq}$
- 3) Then

When finding	Use
<b>Binomial</b>	<b>Normal</b>
$P(x = a)$	$P(a - 0.5 < x < a + 0.5)$
$P(x \geq a)$	$P(x > a - 0.5)$
$P(x > a)$	$P(x > a + 0.5)$
$P(x \leq a)$	$P(x < a + 0.5)$
$P(x < a)$	$P(x < a - 0.5)$

4) **Always** draw the normal distribution curve and **shade** the desired interval.

5) Use  $normalcdf(L, U, \mu, \sigma)$  to find the necessary probabilities.