Addition Rule: $P(A \ or \ B) = P(A) + P(B) - p(A \ and \ B)$

Discrete Probability Distribution

X	f (days)	$f \div n =$ $p(x)$ %	$x\,p(x)$

Expected Value = Mean $= \mu = \sum x\,p(x)$ +

TI-83/84 *Inputting **x-values** in **L1** and **probabilities** in **L2***
then *stat* $\longrightarrow$ *calc* $\longrightarrow$ *Option 1* $\longrightarrow$ *enter* $\longrightarrow$ ***L1 , L2*** $\longrightarrow$ $\longrightarrow$ *enter*

Counting

Factorial: Number of ways **n** objects or subjects can be arranged $= n!$

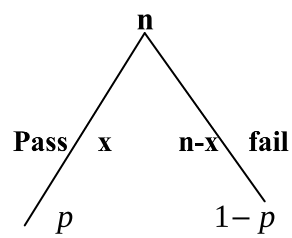
Combination: Number of ways that **x objects** or subjects can be selected from **n** objects or subjects

The **order** in selection is **not relevant**. $nCx = \dfrac{n!}{x!(n-x)!}$ **TI-83/84** *n* $\longrightarrow$ *math* $\longrightarrow$ *PRB* $\longrightarrow$ *Option 3* $\longrightarrow$ *x*

Permutation: Number of ways that **x** objects or subjects can be selected from **n** objects or subjects

The **order** in selection is **relevant**. $nPx = \dfrac{n!}{(n-x)!}$ **TI-83/84** *n* $\longrightarrow$ *math* $\longrightarrow$ *PRB* $\longrightarrow$ *Option 2* $\longrightarrow$ *x*

Binomial Probability



$P(x) = nCx \ p^x (1-p)^{n-x}$ Mean $= \mu = n\,p$ St. Dev. $= \sigma = \sqrt{n\,p(1-p)}$

$p =$ *Desired probability* $n =$ *Total number of trials* $x =$ *Number of desired outcomes*
$nCx =$ *Combination Rule*

TI-83/84 *2nd* $\longrightarrow$ ***DISTR*** $\longrightarrow$ *Option 0* ***then*** ***input*** *(n,p,x)* $\longrightarrow$ *enter*

$P(x) = nCx \ p^x (1-p)^{n-x}$

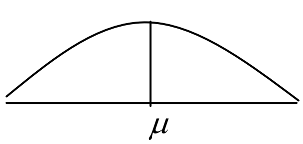
Non - Standard Normal Probability (NSNPD)

TI-83/84 *2nd* $\longrightarrow$ ***DISTR*** $\longrightarrow$ *Option 2* ***then*** *input (LB,UB,* μ *,* σ *)* $\longrightarrow$ *enter*

To create Lower Boundary $LB = \overline{x} - 5s$ To create Upper Boundary $UB = \overline{x} + 5s$

Cut-off point formula $x = \overline{x} + s\,z$ **or** $x = \mu + \sigma\,z$ **TI-83/84** *2nd* $\longrightarrow$ ***DISTR*** $\longrightarrow$ *Option 3 input (%,* μ *,* σ *)*
For finding **Z** , you need to look it up on **page 3** of the table **Hint for TI** *% is the area to the left of the cut off point.*

Converting a **non - standard** value to **standard value** by using



$Z = \dfrac{x - \mu}{\sigma}$ *or* $Z = \dfrac{x - \overline{x}}{s}$