# N - Statistical distributions

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| **What 4 conditions must be satisfied for a Binomial Distribution to be valid?** | 1. Two possible outcomes in each trial. 2. A fixed number of trials. 3. Independent trials. 4. Identical trails (same probability). |
| **What proportion lies within 1 and 3 σ’s of the mean in a Normal Distribution?** | * ± 1 σ is around 68% * ± 3 σ is around 99.8% |
| **What is the z-score? How is it calculated?** | A measure of how many standard deviations a value is to the right of the mean which is calculated by:    *This is sometimes referred to as a test statistic in context.* |
| **Where are the points of inflection of a Normal Distribution?** |  |
| **How can the usage of the Normal Distribution as an approximate for the Binomial Distribution be refined?** | 1. Increasing number of events (n). 2. Having p closer 0.5 (more symmetrical).     The approximation can still be used if it’s p = 0.2 but it won’t be as good. |
| **What is the continuity correction? How can it be used?** | Say you need to work out P(X < 8) on the Binomial Distribution, You can calculate P(Y ≤ 7.5) on the Normal Distribution. |
| **When do we divide by n or n - 1 for the variance?** | * Either works. * Divide by n - 1 when an unbiased estimator of the popular variance is required. |