Discrete Distributions

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| --- | --- | --- | --- | --- | --- |
| Name | Formula | Support/Pars | Mean | Variance | MLE |
| Binomial()  successes out of trials with prob. of success |  |  |  |  |  |
| Geometric  failures and one success with prob |  |  |  |  |  |
| Hypergeometric  red and green marbles in an urn, remove is number of red marbles in the sample | is not useful | = max(0,  ), …, min( |  |  |  |
| Negative Binomial()  is the number of failures before the th success with prob |  |  |  |  |  |
| Poisson()  is the expected count in an interval |  |  |  |  |  |

Continuous Distributions

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| Name | Formula | Support/Pars | Mean & Var | MLE | Sampling Distr |
| Normal() |  |  |  |  |  |
| Gamma()  Sometimes parameterized with |  | Shape:  Rate:  Scale: |  | No closed form | , but this is not usually useful. |
| Exponential()  aka Gamma(1, ) |  | Rate: |  |  | , so is Inv. Gamma. |
| Exponential()  aka Gamma |  | Scale: |  |  |  |
| Chi-Square()  aka Gamma |  |  |  | No closed form |  |
| Beta() | is not useful | Shape1:  Shape2: |  | No closed form |  |
| Weibull() | is not useful | Shape:  Scale: |  | No closed form |  |
| Lognormal()  If , then is Lognormal | is not useful | Shape:  Scale: |  |  |  |