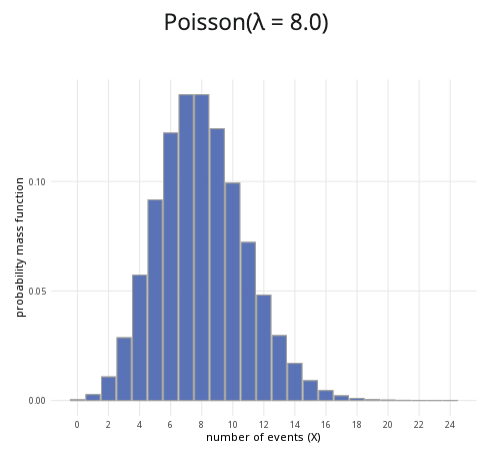
Factsheet: Poisson distribution

Michelle Arnetta and Tom Coleman

Summary

A factsheet for the Poisson distribution.



An example of the Poisson distribution with .

**Where to use:** The Poisson distribution is used when a specific event occurs at some rate , and you are counting , the number of times this event occurs in some interval.

**Notation:** or .

**Parameter:** is the integer number of times an event occurs within a specific period of time.

| Quantity | Value | Notes |
| --- | --- | --- |
| **Mean** |  |  |
| **Variance** |  |  |
| **PMF** |  |  |
| **CDF** |  | the floor function |

**Example:** Customers enter Cantor’s Confectionery at an average rate of 20 people per hour, and you want to see the likelihood that number of customers walks in. This can be expressed as .

# Further reading

[This interactive element appears in Overview: Probability distributions. Please click this link to go to the guide.](../overviews/o-distributions.qmd)

## Version history

v1.0: initial version created 04/25 by tdhc and Michelle Arnetta as part of a University of St Andrews VIP project.

* v1.1: moved to factsheet form and populated with material from [Overview: Probability distributions](../overviews/o-distributions.qmd) by tdhc.

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