Worksheet A: Modelling using the Poisson distribution

For each of the situations below, decide whether or not they can be modelled by a Poisson distribution. Give at least one condition for each situation that **can** be modelled using a Poisson distribution and for those you think **cannot** be modelled using a Poisson distribution explain why.

|  |  |
| --- | --- |
| **Situation** | **Poisson distribution?** |
| 1. The number of phone calls received by a bank per day. |  |
| 2. Number of cars passing a point on a very busy motorway in a 10-minute period. |  |
| 3. The number of people waiting at a bus stop per hour each day. |  |
| 4. The number of particles emitted per minute by a radioactive substance. |  |
| 5. The number of accidents in a large factory per month. |  |
| 6. The number of injuries in a large factory per month. |  |
| 7. The number of errors per 10 pages of a first draft of a new book. |  |
| 8. The number of weeds growing in a randomly selected square metre of field. |  |
| 9. The number of patients in a hospital with an infectious disease per month. |  |
| 10. There are four different queues in a shop; the number of people joining each queue per hour. |  |