Question 13.1

For each of the following distributions, give an example of data that you would expect to follow this distribution (besides the examples already discussed in class).

Answer

1. **Binomial** **Distribution:**

Binomail Distribution models the probability of getting n successes before a failure where each individual success or failure is a **Bernoulli trail** with success probability = p and failure probability = 1-p.

**Binomial Distribution Example:** How many wins in a series of table tennis games before a losing to the opponent?

1. **Geometric Distribution:**

Geometric Distribution models the probability of getting n failures before a success where each individual success or failure is a **Bernoulli trail** with success probability = p and failure probability = 1-p.

**Geometric Distribution Example:** How many loses in a series of table tennis games before winning over the opponent.

1. **Poisson Distribution:**

This is good at modeling random arrivals. Lambda is average number of arrivals per time period.

**Poisson Distribution Example:** Average number of people arriving at the movies ticketing queue in a day can be modelled using Poisson Distribution.

1. **Exponential Distribution:** Time between successive arrivals is modeled using Exponential Distribution.

**Exponential Distribution Example:** The time between successive arrivals of people arriving at the movies ticketing queue can be modelled using Exponential Distribution.

1. **Weibull Distribution:** Time between failures is modeled using Weibull.

**Weibull Distribution Example:** The time between Cars having a repair can be modelled using Weibull Distribution.