

Probability Examples

System Problems: In series, In parallel

Suppose a system consists of components connected in *series*. The system fails if any one of the components fails. If there are n independent components and each fails with probability p ,

1. what is the probability that the system will fail?
2. Suppose the system of components is connected in *parallel*, what is the probability the system will fail?
3. Draw diagrams that accurately represent the systems.

Birthday Problem Simulation

Simulate birthdays

```
b = sample(1:365,25, repl = T)
```

Check matches

```
x = 25 - length(unique(b))
```

Hardy-Weinberg Law

See Problems 72 and 73.