Example 9

A gambler wins £20 with probability 0·1 and loses £1 with probability 0·9. What is his expected win?

Example 5

On past evidence. an electrical component has a probability of 0·98 of being satisfactory. What is the probability of getting two or more defectives in a sample size five?

Example 10

Suppose that the number of dust particles per unit volume in a certain mine is randomly distributed with a Poisson distribution and that the average density is μ particles per litre.

A sampling apparatus collects a one-litre sample and counts the number of particles in it. If the true value of μ is six, what is the probability of getting a reading less than two?

Let X = (number of particles in a one-litre sample).

*   A $50,000 diamond is insured for its total value by pay a premium of D dollars. If the probability of theft in a given year is estimated to be 1%, what premium should the insurance company charge if it wants the expected gain to equal $1000?