

The service life of an incandescent light bulbs used domestically was investigated.

It was found that a light bulb can last up to 3 years, and the probability distribution of the number of years a light bulb was used before failure is given below:

Years light bulb was used before failure (x)	0	1	2	3
Probability of x years	0.1	0.3	0.5	0.1

- (i) What is the mean service life of a light bulb?
- (ii) What is the variance and standard deviation of a service life of a light bulb?