

These counts are drawn from the Poisson distribution, $Poisson(4000/437)$.

$$\frac{6}{6}$$

i)

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load(spikes)
» spikes[100] (M246 p.000)
mean(spikes)
36.49
```

The mean time between spikes is 36.49 milliseconds, i.e. spikes occur at the rate of $1/36.49$ milliseconds, or 27.4 spikes per second (to four significant figures).

iii) The SSC command is $pp(1000, 1/36.49)$ which returns the cumulative measured times in milliseconds.

Using the program from (ii)

pp(1000, 1/36.49)	103	23	43	5
121.4	198.9	199.7	285.3	286.3
358.5	373.4	380.3	407.9	415.3
497.2	619.1	653.3	749.6	770.9
948.4				788.4

There were 23 spikes.

$$\frac{6}{6}$$

(27)

3) a) mean = $1 + 4 + 10 + 15 + 15 = 9$

$$\text{variance} = \sum_{i=1}^5 (x_i - \bar{x})^2$$

$$\frac{2}{2} = \frac{(1-9)^2 + (4-9)^2 + (10-9)^2 + (15-9)^2 + (15-9)^2}{5-1}$$

$$= 40.5$$

b)