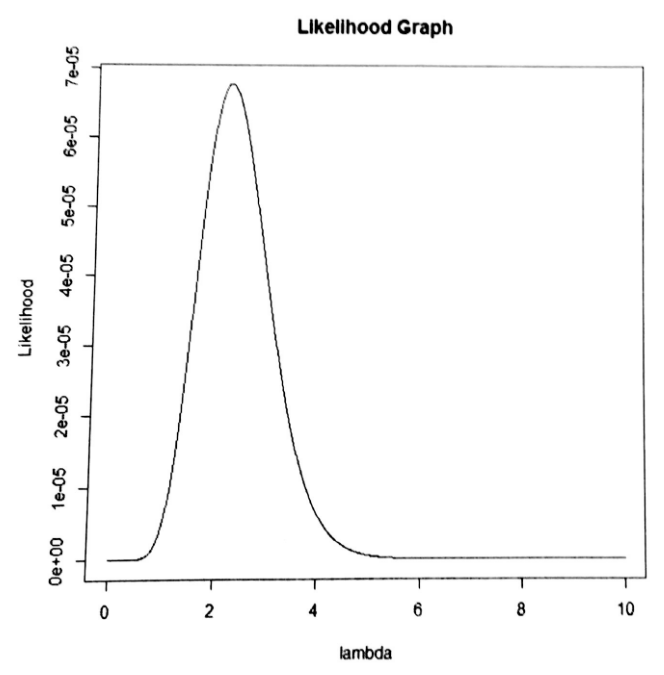
**Problem 5.4:**

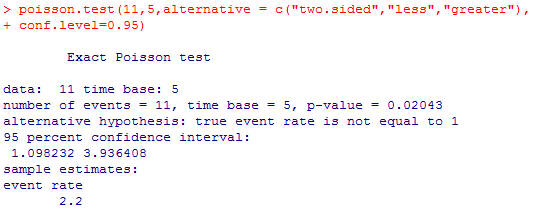
**1.**

**2.**

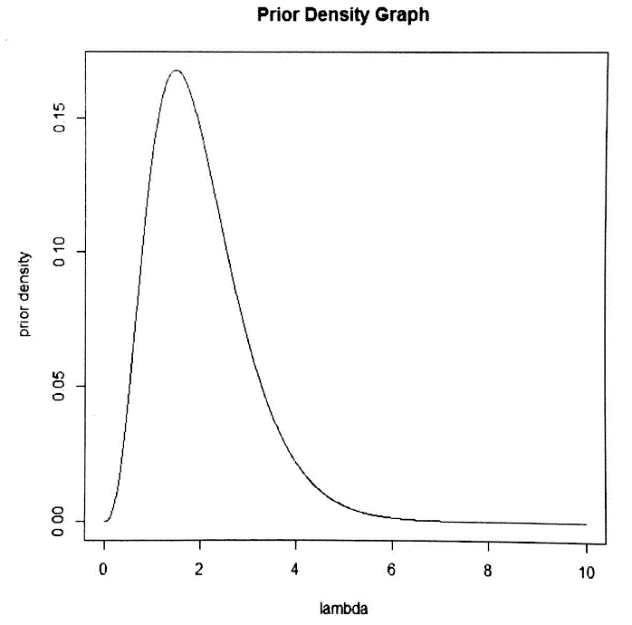


**3.**

Therefore, is **the mle of** .



The R output has a same **mle of 2.2**. The 95% CI for is **(1.0982, 3.9364)**

**Problem 5.5:**

**1.** The prior is a member of **Gamma (4,2).**

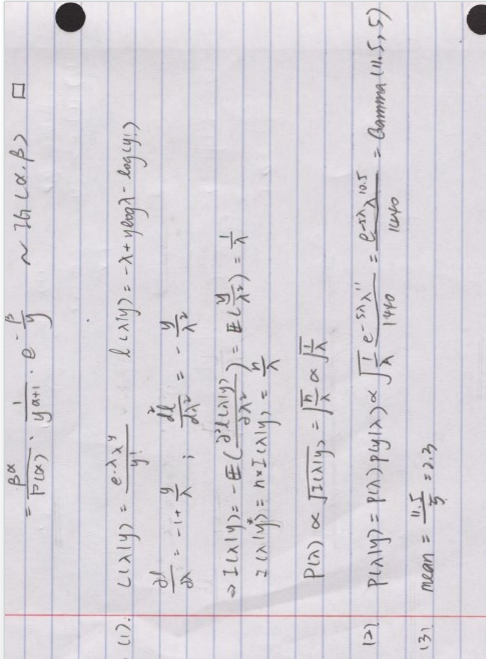
**2.** The plot indicates that the president’s prior belief about rate parameter is maximized around somewhere between 1.6 to 2.5. The majority of expected number of breakdowns are distributed around 0 to 5.

**3.**

**4.** Mean is 15/7 = **2.143**

**5. Yes**, it was. It’s a Poisson distribution because they have the same likelihood as the one in problem 5.4.

**Problem 5.6:**



The 95% credible set is **(1.1689, 3.8076).**

**4.** The Bayesian point estimate is **larger** than the classical estimate (2.3 > 2.2). In addition, the interval estimate is **wider** than the classical interval estimate.

**5.** The employee’s estimate is **larger** than that of the president since the employee has larger .

**6.** Employee:



**7.** President:



**(problems in Section 6 are on next page)**