Q2

Congye

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i

```
uniform.loglik <- function(para, data) {
  # para[1] = lambda
  # para[2] = p

  z <- sum(
    lfactorial(data + para[1] - 1)
    - lfactorial(data)
    - lfactorial(para[1] - 1)
    + data * log(1 - para[2])
    + para[1] * log(para[2]))

  return(z)
}

para_1 <- c(4, 0.25)
para_2 <- c(3, 0.5)
uniform.loglik(para_1, caterpillars)
```

```
## [1] -894.3966
```

```
uniform.loglik(para_2, caterpillars)
```

```
## [1] -371.9848
```

So, the result of $l(4, .25)$ is -894.3966453, the result of $l(3, 0.5)$ is -371.9848021