```r
cars = c(0, 1, 2, 3)
shifts = c(5, 14, 5, 1)

rate = (1/25)*(t(cars)%*%shifts)
prob = ppois(cars, lambda = rate)
ei = 25*prob

print(rate)
```

```
##      [,1]
## [1,] 1.08
```

```r
print(prob)
```

```
## [1] 0.3395955 0.7063587 0.9044108 0.9757096
```

```r
print(ei)
```

```
## [1]  8.489888 17.658967 22.610270 24.392739
```

```r
d = sum(((ei-shifts)^2)/ei)

print(d)
```

```
## [1] 38.34241
```

```r
p = 1- pchisq(d, 3)
print(p)
```

```
## [1] 2.391911e-08
```

```r
print(paste("Since p =", p, ", we have no evidence to reject H0"))
```

```
## [1] "Since p = 2.39191104700609e-08 , we have no evidence to reject H0"
```