

47. You are given the following observed claim frequency data collected over a period of 365 days:

| <u>Number of Claims per Day</u> | <u>Observed Number of Days</u> |
|---------------------------------|--------------------------------|
| 0                               | 50                             |
| 1                               | 122                            |
| 2                               | 101                            |
| 3                               | 92                             |
| 4+                              | 0                              |

Fit a Poisson distribution to the above data, using the method of maximum likelihood.

Regroup the data, by number of claims per day, into four groups:

0      1      2      3+

Apply the chi-square goodness-of-fit test to evaluate the null hypothesis that the claims follow a Poisson distribution.

Determine the result of the chi-square test.

- (A) Reject at the 0.005 significance level.
- (B) Reject at the 0.010 significance level, but not at the 0.005 level.
- (C) Reject at the 0.025 significance level, but not at the 0.010 level.
- (D) Reject at the 0.050 significance level, but not at the 0.025 level.
- (E) Do not reject at the 0.050 significance level.