Name: _____          Date: _____

# QUIZ – CHI SQUARED

1. (100%) left handed people and right handed people are tested to see if they prefer reading different genres of books. The following results are obtained:

|  | Fiction | Non-Fiction | Science | Adventure |
|---|---|---|---|---|
| Left Handed | 56 | 28 | 68 | 69 |
| Right Handed | 152 | 144 | 121 | 132 |

   a. (10%) Write down the null hypothesis for this experiment.

   b. (5%) Write down the alternative hypothesis for this experiment.

   c. (10%) Find the number of degrees of freedom (show work)

   d. (15%) Find the value expected for left handed who read Science (must show work, not with calculator).

   e. (10%) Use your calculator to obtain the expected values, write down the matrix.

|  | Fiction | Non-Fiction | Science | Adventure |
|---|---|---|---|---|
| Left Handed |  |  |  |  |
| Right Handed |  |  |  |  |

   f. (20%) Write down the critical value for $\chi^2_{critical}$ this experiment with 1 % level of significance.

   g. (15%) Calculate the $\chi^2_{calc}$ statistic for this data.

   h. (15%) What is the conclusion of the test? Give a clear reason for your answer.