MATU9D2: PRACTICAL STATISTICS

Spring 2017

PRACTICAL SESSION 4

- Hand Calculations 4
  Chi-squared Tests (Independence &
  Goodness of Fit)

- Handout 1 of 2

1. The incidence of three types of malaria in three tropical regions was found to be

	Africa	Asia	South America
Malaria A	14	31	45
Malaria B	5	2	53
Malaria C	45	53	2

a. Write down the null and alternative hypotheses for the test that the malaria type is independent of the region.
b. Perform an appropriate test to determine whether or not there is a relationship between location and type of malaria at a 5% significance level.

2. A dice is thrown 120 times and the following distribution of outcomes is observed.

Outcome	Observed
1 thrown	24
2 thrown	15
3 thrown	27
4 thrown	17
5 thrown	22
6 thrown	15

Use an appropriate test to determine whether or not the dice is fair with a significance level of 1% (Hint: the distribution of expceted outcomes of a fair dice should be uniform i.e. we expect each number to have the same number of throws).