

MCQ Weeks  
9-11

T or F

- 1 a) A hypothesis test results in a P-value less than 0.01: this is strong evidence against the null hypothesis
- 1 b) A hypothesis test yields a P-value of 0.52: this provides evidence that the null hypothesis is true
- 1 c) For two groups of Normal variables, a  $t$ -test tests the null hypothesis that the two population means are unequal
- 2 a) An unpaired  $t$ -test assumes that the standard deviations of the two populations are the same
- 2 b) A paired  $t$ -test assumes that the data in each group are Normally distributed
- 2 c) How you interpret a P-value differs depending on whether you are using a paired or unpaired  $t$ -test
- 3 a) A  $\chi^2$  test can be applied to binary data
- 3 b)  $\chi^2$  tests must be applied to a table of counts, rather than percentages
- 3 c)  $\chi^2$  tests can be applied to paired binary data
- 4 a) An unpaired  $t$ -test is an alternative to the  $\chi^2$  test when analysing binary data
- 4 b) The standard error of a sample proportion depends on the sample size
- 4 c) The standard error of a sample proportion depends on population proportion
- 5 a) The mean blood pressure of a group of patients is compared before and after the administration of a beta-blocker. The unpaired  $t$ -test is likely to be the correct test to use
- 5 b) The heights of the girls and boys entering a first school are to be compared. This can be done correctly with a  $\chi^2$  test
- 5 c) A hypothesis test can never prove that the null hypothesis is true