

Chi Squared Test IB Answers 2014

1. (a)

	Drama	Comedy	Film	News
Males	58	119	157	52
Females	86	98	120	61

(M1)(M1)(A1) 3

(b) H_0 : favourite TV programme is independent of gender or no association between favourite TV programme and gender

H_1 : favourite TV programme is dependent on gender (*must have both*) (A1) 1

(c) $\frac{365 \times 217}{751}$ (M1)

= 105 (A1)(ft)(G2) 2

(d) 12.6 (accept 12.558) (G3) 3

(e) (i) 3 (A1)

(ii) *reject H_0 or equivalent statement (eg accept H_1)* (A1)(ft) 2
[11]

2. (a) (i) $a = 29.45, \quad b = -5.55, \quad c = 30.8025, \quad d = 1.046$ (A4)

(ii) $\chi^2_{\text{calc}} = 1.012 + 0.946 + 1.118 + 1.046 = 4.12$ (A1)

(iii) degrees of freedom = $(2 - 1)(2 - 1) = 1$ (A1)

6

(b) Do not accept H_0 . The weight of a puppy is related to the weight of the parent.

(R1) (A1)

$\chi^2_{\text{calc}} > \chi^2_{\text{crit}}$

2

[8]