1. (a) (A1)(A1)

Note: *Award (A1) for sum +T, (A1) for 56 or 7 × 8 or 8 in the denominator and 7 seen.*

$T = 10$ (A1) (C3)

(b) 4 (A1) (C1)

(c) 4, 4, 4, 5, 7, 8, 10, 14 (M1)

Note: *Award (M1) for arranging their numbers in order.*

Median = 6 (A1)(ft) (C2)

[6]

2. (a) 170 (A1) (C1)

(b) 163 (A1) (C1)

(c) 172 (A1) (C1)

(d)

(A1)(ft)(A1)(ft)(A1) (C3)

Notes: *Award (A1)(ft) for correct median, (A1)(ft) for correct quartiles and box, (A1) for correct end points of whiskers. Award at most (A1)(A1)(A0) if lines go right through the box.*

[6]

3. (a)

(A1)(A1)(A1) (C3)

Note: *Award (A1) for each correct pair.*

(b) 0.7×0.1
$= 0.07$ (, 7%) (A1)(ft) (C1)

(c) $0.3 \times 0.8 + 0.07$ (M1)
$= 0.31$ (, 31%) (A1)(ft) (C2)

Note: *In (b) and (c) follow through from sensible answers only i.e. not a probability greater than one.*

[6]

4. (a)

(A1)(A1)(A1) (C3)

Note: *Award (A1) for a labeled Venn diagram with appropriate sets.*
(A1) for 7, (A1) for 8 and 5.

(b) P (Spanish / one language only) = (M1)(A1)(ft)

Note: *Award (M1) for substituted conditional probability formula, (A1) for correct substitution. Follow through from*

their Venn diagram.

= (0.615, 61.5%) (A1)(ft)

OR

P (Spanish / one language only) = (A1)(ft)(M1)

Note: *Award (A1) for their correct numerator, (M1) for correct recognition of regions.*
Follow through from their Venn diagram.

= (0.615, 61.5%) (A1)(ft) (C3)

[6]

5. (a)

(A1)(A1)(A1)

Note: *Award (A1) for each correct number in the correct position.*

(b) 28 (A1)(ft)

Note: *20 + their 8*

(c) 59 (A1)(ft)

(d) 10 + 12 + 20 + 6 (M1)

Note: *Award (M1) for use of the correct regions.*

= 48 (A1)(ft)(G2)

OR

59 – 8 – 3 (M1)
= 48 (A1)(ft)

[7]

6. (a) (i) 50 (G1)

(ii) 16.8 (G1)

(iii) 30.5 (G1)

(iv) 12.3 (G1)

Note: *Award (A1)(ft) for 13.0 in (iv) but only if 17.7 seen in (a) (ii).*

(b) $r =$ (M1)

Note: *Award (M1) for using their values in the correct formula*

= 0.911 (accept 0.912, 0.910) (A1)(ft)(G2)

(c) $y = 0.669x - 2.95$ (G1)(G1)

Note: *Award (G1) for 0.669x, (G1) for –2.95. If the answer is not in the form of an equation, award at most (G1)(G0).*

(d) Depth = $0.669 \times 55 - 2.95$ (M1)
= 33.8 (A1)(ft)(G2)(ft)

Note: *Follow through from their (c) even if no working seen.*

(e) (i) 64.0 (accept 63.95, 63.9) (A1)(ft)(G1)(ft)

Note: *Follow through from their (c) even if no working seen.*

(ii) It is not valid. It lies too far outside the values that are given. *Or equivalent*. (A1)(R1)

Note: *Do not award (A1)(R0).*

[13]

7. (a) 28 (A1)

(b) (M1)(A1)(ft)

Note: *Award (M1) for correct formula, (A1) for correct substitution.*

$= 12.6$ (AG)

Note: *Do not award (A1) unless 12.6 seen.*

(c) (i) the favourite car colour is **independent** of gender. (A1)

Note: *Accept there is no association between gender and favourite car colour.*
Do not accept 'not related' or 'not correlated'.

(ii) 2 (A1)

(iii) 5.991 (5.99) (A1)(ft)

Note: *Follow through from (c)(ii) for their degrees of freedom.*

Note: *Accept any accuracy beyond 3 s.f.*

(iv) Accept the null hypothesis since $1.367 < 5.991$ (A1)(ft)(R1)

Note: *Allow "Do not reject". Follow through from their null hypothesis and their critical value.*
Full credit for use of p-values from GDC [p = 0.505]
Do not award (A1)(R0). Award (R1) for valid comparison.

[8]