



Q	Answer	Marks
1	a) 0 b) 0.75 c) 0.25	3
2	a) 0.18 b) 0.72 c) 0.12	4
3	a) 0.143 (3 s.f.) b) 0.135 (3 s.f.)	4
4	a) tennis only 16, both 7, squash only 11, neither 16 b) 27/50 c) 8/25	5
5	a) first: red 5/8, blue 3/8; after red: red 4/7, blue 3/7; after blue: red 5/7, blue 2/7 b) 13/28 c) 9/14	5
6	a) 7/15 b) 1/10 c) 41/60 d) $P(\text{car}) \times P(\text{Year 12}) = 0.2 \times 0.5 = 0.1 = P(\text{car and Year 12})$, so they are independent	6
7	a) rain 0.3, no rain 0.7; after rain: late 0.4, on time 0.6; after no rain: late 0.15, on time 0.85 b) 0.225 c) 0.349 (3 s.f.)	6
8	a) $p = 0.15$, $q = 0.3$ b) $P(A) \times P(B) = 0.4 \times 0.45 = 0.18$, which is not $0.15 = P(A \cap B)$, so not independent c) 0.7	5
9	a) 0.2 b) A only 0.3, $A \cap B$ 0.2, B only 0.12, $B \cap C$ 0.08, C only 0.12, outside 0.18 (A and C do not overlap) c) 0.48	7
10	a) 0.4 b) each Box 2 pair of branches: green 0.4, white 0.6 c) 0.64 d) $P(G \cap S) = 0.16$ but $P(G) \times P(S) = 0.4 \times 0.52 = 0.208$, so not independent	7
11	a) all three 8; M and P only 12; M and C only 10; P and C only 3; M only 22; P only 4; C only 15; none 26 b) 0.25 c) 0.26 d) $P(P) \times P(C) = 0.27 \times 0.36 = 0.0972$, but $P(P \cap C) = 0.11$, so not independent	8
12	a) 0.4 b) 0.46 c) 0.176 (3 s.f.)	8

Full worked solutions, written out by hand, are on the solutions sheet for this topic.