Data Handling & Probability: Hard Practice Paper 3 Answers

Q#	Answer	Explanation
1	D	The four bars total 60 + 90 + 120 + 30 = 300 pounds, and Year 4 raised 90. As a decimal that is 90 ÷ 300 = 0.3, which is 30%.
2	A	Year 6 raised £30 and Year 5 raised £120, so the fraction is 30 ÷ 120 = 1/4.
3	C	The whole amount raised is £300, and each pound buys 5 pencils, so that is 300 × 5 = 1500 pencils.
4	E	A right angle is 90°, which is a quarter of the full 360°. A quarter of the people is 480 ÷ 4 = 120.
5	B	Each person is worth 360 ÷ 480 = 0.75°, so the 60 golfers take up 60 × 0.75 = 45°.
6	C	All eight numbers add up to 8 × 12 = 96 and the first five add up to 5 × 9 = 45, so the last three add up to 96 − 45 = 51. Their mean is 51 ÷ 3 = 17.
7	A	The range is the largest take away the smallest, so the largest is the smallest plus the range: 8 + 8 = 16. The median of 12 sits comfortably between them, so the set is possible.
8	E	The four equally likely results are HH, HT, TH and TT. Only TT has no head at all, and its probability is 1/4, so at least one head has probability 1 − 1/4 = 3/4.
9	D	The bus row totals 30 pupils out of the 50 in the table. As a decimal that is 30 ÷ 50 = 0.6, which is 60%.
10	B	Only the 5 km or more column matters, and it holds 26 pupils. Two of them walk, so the probability is 2 ÷ 26 = 1/13.
11	E	Taking out the ones who like both leaves 35 − 12 = 23 who like only tea and 28 − 12 = 16 who like only coffee. Exactly one drink is therefore 23 + 16 = 39 people.

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12	C	At 2 pm the car had gone 60 km and by 4 pm it had gone 210 km, so it covered 210 − 60 = 150 km. That took 2 hours, so the average speed is 150 ÷ 2 = 75 km/h.
13	A	The goals scored come to 8 from the one-goal matches, 8 from the two-goal matches and 6 from the three-goal matches, giving 8 + 8 + 6 = 22 goals. Over 20 matches the mean is 22 ÷ 20 = 1.1.
14	B	If red has probability 2/5 then blue has probability 1 − 2/5 = 3/5, so the 24 blue counters are three fifths of the bag. One fifth is 24 ÷ 3 = 8 counters, so the whole bag is 8 × 5 = 40.
15	D	All the probabilities together must make 1. Red and blue come to 0.3 + 0.45 = 0.75, so green is 1 − 0.75 = 0.25.

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