Data Handling & Probability: Hard Practice Paper 6 Answers

Q#	Answer	Explanation
1	B	Add the five bars and share the total between the weeks. The total is 30 + 50 + 40 + 60 + 20 = 200 eggs over 5 weeks, so the mean is 200 ÷ 5 = 40 eggs a week.
2	D	Week 4 gave 60 eggs out of a total of 200. As a fraction that is 60 out of 200, and 60 ÷ 200 = 0.3, which is 30%.
3	C	Week 4 gave 60 eggs. Ten per cent of 60 is 60 ÷ 10 = 6, so twenty per cent is 6 × 2 = 12 eggs more. Week 6 therefore gave 60 + 12 = 72 eggs.
4	B	Work out the marks each group scored altogether. The boys scored 15 × 58 = 870 and the girls scored 10 × 68 = 680, so the class scored 870 + 680 = 1550. Sharing that between 25 pupils gives 1550 ÷ 25 = 62. It is not 63, because there are more boys than girls.
5	C	The eight numbers add up to 8 × 14 = 112. Swapping 9 for 25 adds 25 − 9 = 16 to that total, making 112 + 16 = 128. There are still eight numbers, so the new mean is 128 ÷ 8 = 16.
6	C	The range is the largest take away the smallest, so the smallest is 18 − 12 = 6. The median of 10 is not needed for this part, but it does confirm that the middle number sits between 6 and 18.
7	C	All the matches must add up to 20. The known figures come to 6 + 6 + 3 = 15, so the missing one is 20 − 15 = 5 matches.
8	B	Count the goals rather than the matches. The team scored 5 × 1 = 5 goals in the one-goal matches, 6 × 2 = 12 in the two-goal matches and 3 × 3 = 9 in the three-goal matches, giving 5 + 12 + 9 = 26 goals. Over 20 matches the mean is 26 ÷ 20 = 1.3.
9	A	Four of the houses sold for between £150,000 and £165,000, but the £900,000 house drags the mean far above all of them. The median is the middle price, £160,000, which sits among the ordinary prices and describes the street much better.

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10	D	The whole class measures 30 × 140 = 4200 cm altogether and the girls measure 18 × 138 = 2484 cm. That leaves 4200 − 2484 = 1716 cm for the boys, so their mean height is 1716 ÷ 12 = 143 cm.
11	D	The six numbers add up to 6 × 11 = 66. For seven numbers to have a mean of 12 they must add up to 7 × 12 = 84, so the number added has to be 84 − 66 = 18.
12	D	Doubling every number doubles their total, and the number of values stays at four, so the mean doubles too: 9 × 2 = 18. For example 6, 8, 10 and 12 have a mean of 9, and 12, 16, 20 and 24 have a mean of 18.
13	B	Average speed uses the whole distance and the whole time, not the separate hours. She travelled 50 km in 4 hours, so her average speed is 50 ÷ 4 = 12.5 km/h.
14	E	The range only tells you how spread out each set is, not where the numbers actually sit. If set B lies well above set A the combined range could be very large, but if set B sits inside set A the combined range would still be 12. Without the actual values it cannot be decided.
15	C	The four numbers must add up to 4 × 8 = 32, and the three given ones come to 5 + 8 + 11 = 24, so the fourth is 32 − 24 = 8. Checking the range: the numbers are 5, 8, 8 and 11, and 11 − 5 = 6, which is right.

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