Fractions, Decimals & Percentages: Hard Practice Paper 6 Answers

Q#	Answer	Explanation
1	C	The £170 is what is left after 15% has gone, so it stands for 85% of the old price. That makes 5% equal to 170 ÷ 17 = 10 pounds, and the full 100% is 10 × 20 = 200 pounds. Adding 15% to £170 would be wrong, because the discount was taken off the larger price.
2	D	After the increase the 108 stands for 135% of the original. So 1% is 108 ÷ 135 = 0.8, and the whole 100% is 0.8 × 100 = 80.
3	B	The increase gives 200 + 20 = 220 pounds. The decrease is then 10% of £220, which is £22, not the £20 added earlier, so the final amount is 220 − 22 = 198 pounds. Going up and then down by the same percentage does not return you to the start.
4	C	In the first year the interest is 5% of £800, which is £40, making £840. In the second year the interest is 5% of £840, which is £42, because the interest is worked out on the larger amount. The total is 840 + 42 = 882 pounds.
5	B	A quarter of £12,000 is £3,000, so after the first year it is worth 12000 − 3000 = 9000 pounds. Twenty per cent of £9,000 is £1,800, so after the second year it is worth 9000 − 1800 = 7200 pounds.
6	C	The profit is 54 − 45 = 9 pounds, and profit is always measured against what the shop paid. As a fraction that is 9/45, which cancels to 1/5, and a fifth is 20%.
7	B	The £480 is 120% of the price before VAT, because the VAT was added on. So 20% is 480 ÷ 6 = 80 pounds, and the price before VAT is 480 − 80 = 400 pounds. Taking 20% off £480 would give £384, which is the common mistake.
8	E	Ten per cent of 240 is 24, so 15% is 24 + 12 = 36. For the other, 24% of 150 is the same as 150 × 0.24 = 36. Both come to 36, so neither is greater.
9	B	If 40% are boys then the girls make up the other 60%, and that 60% is 18 pupils. So 10% is 18 ÷ 6 = 3 pupils, and the whole class is 3 × 10 = 30.

10	A	Shop P takes a third off, which is 120 ÷ 3 = 40 pounds, leaving £80. Shop Q takes 30% off, which is £36, leaving £84, and then £5 more comes off at the till, leaving £79. Shop Q is cheaper by 80 − 79 = 1 pound.
11	C	The score has gone up by 15 marks in every hundred, but the question asks for the percentage increase, which is measured against the starting score of 60. As a fraction that is 15/60, which cancels to 1/4, so the increase is 25%.
12	B	The increase adds 20% of £60, which is £12, making £72. The reduction then takes a quarter of £72, which is £18, so the final price is 72 − 18 = 54 pounds.
13	C	If she spent 2/5 then the £27 is the other 3/5 of her money. One fifth is therefore 27 ÷ 3 = 9 pounds, so all five fifths come to 9 × 5 = 45 pounds.
14	D	Four per cent of £1,200 is 1200 ÷ 100 = 12 for each per cent, so 12 × 4 = 48 pounds a year. Over three years that is 48 × 3 = 144 pounds of interest, giving 1200 + 144 = 1344 pounds.
15	C	Thirty per cent of £250 is £75, so the reduced price is 250 − 75 = 175 pounds. Adding 20% VAT means adding 20% of £175, which is £35, giving 175 + 35 = 210 pounds.

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