Algebra & Sequences: Medium Practice Paper 8 Answers

Q#	Answer	Explanation
1	D	Follow the steps in order: 12 + 5 = 17, and then 17 × 2 = 34.
2	B	Ravi saves £4 more each week, so the amount after week n is 4n + 3 pounds. In week 9 that is 36 + 3 = 39 pounds, which is not yet over £40, and in week 10 it is 40 + 3 = 43 pounds, which is. So week 10 is the first.
3	A	The 3 multiplies both parts inside the bracket. It gives 3 × 2x = 6x and 3 × 5 = 15, and the sign stays a minus, so the expression is 6x − 15.
4	D	Each term is half of the one before, not a fixed amount less. Half of 0.1 is 0.05.
5	B	Add the 3 back on and see whether 8 divides what is left: 53 + 3 = 56, and 56 ÷ 8 = 7, so 53 is the 7th term. None of the other four numbers gives a whole number this way.
6	B	Take off the call-out charge first: 140 − 40 = 100 pounds is left for the hours. Each hour costs £25, so the plumber worked 100 ÷ 25 = 4 hours.
7	B	From the 1st term to the 9th term there are 8 steps, not 9. The sequence rises by 40 − 8 = 32 in total, so each step is 32 ÷ 8 = 4.
8	A	Put 7 in place of x in each one. For the first, 3 × 7 = 21 and then 21 − 4 = 17, which is right. The others need x = 8, x = 5.25, x = 6 and x = 6.
9	C	Collect the y terms first, since 2 + 3 = 5, giving 5y − 4 = 26. Add 4 to both sides: 5y = 30, so y = 6.
10	D	These are the cube numbers: each one is a number multiplied by itself three times, since 2 × 2 × 2 = 8, 3 × 3 × 3 = 27 and 4 × 4 × 4 = 64. The next is 5 × 5 × 5 = 125.
11	A	Expand the bracket first to get 5m + 10. Adding the 3m gives 5 + 3 = 8 lots of m, so the answer is 8m + 10.

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12	C	If n were 12 then 12 + 8 = 20, which is not more than 20. The next whole number gives 13 + 8 = 21, which is, so the smallest value is n = 13.
13	E	The six children take s sweets each, which is 6s sweets in total, and the 4 left over are still there. So the starting number was 6s + 4.
14	D	With x = 5, four of them come to 20: 4 × 5 = 20, then 25 − 5 = 20, then 15 + 5 = 20 and 30 − 10 = 20. The odd one out is 2x + 11, which gives 10 + 11 = 21.
15	A	The sequence goes up in 5s from 3, so the terms end in 3, 8, 3, 8 and so on and can never end in 0. The nearest terms to 100 are 98 and 103, so 100 is missed. The terms are not all odd, since 8 and 18 are even.

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