Algebra & Sequences: Medium Practice Paper 7 Answers

Q#	Answer	Explanation
1	B	Take the steps in order. First 10 − 4 = 6, then 6 × 3 = 18. Multiplying first would give the wrong answer of 26.
2	A	The number of tiles goes up by 4 each time, so the rule starts with 4n, which would give 4, 8, 12, 16. Every real value is 1 more than that, so the rule is 4n + 1.
3	E	Every term is a multiple of 6. Checking each number, 48, 66, 84 and 96 all divide exactly by 6, but 106 ÷ 6 leaves a remainder, so 106 is not a term.
4	C	Work out each part separately. n^2 means 4 × 4 = 16, and 2n means 2 × 4 = 8. Then 16 − 8 = 8.
5	D	Do the bracket first: 9 + 5 = 14. Then double it: 14 × 2 = 28, so the perimeter is 28 cm.
6	C	The sequence goes up in 5s, so its nth term is 5n − 1. The 12th term is 60 − 1 = 59, which is under 60, and the 13th term is 65 − 1 = 64, which is not. So 12 terms are less than 60.
7	A	Three pencils cost 3p pence, and the rubber adds 40 pence, so the bill is 3p + 40. Everything must be in the same units, and £1.30 is 130 pence, so the equation is 3p + 40 = 130.
8	C	Collect the x terms on the left first: 5 + 2 = 7, so the equation is 7x = 42. Then divide by 7 to get x = 6.
9	C	Replace n with 4 in the rule: 100 ÷ 4 = 25. Here the terms get smaller as the position gets bigger.
10	B	This sequence halves each time rather than going down by a fixed amount. The missing term is 80 ÷ 2 = 40, and halving again gives the 20 that follows it.
11	A	Only the number is divided, since 12a means 12 lots of a. As 12 ÷ 4 = 3, the answer is 3a.

myfreeschool

12	B	Try the whole numbers in turn: $3 \times 6 = 18$, which is less than 20, but $3 \times 7 = 21$, which is too big. So the largest possible value is $n = 6$.
13	D	Set the extra 6 girls aside, leaving $30 - 6 = 24$ children in equal numbers, so $24 \div 2 = 12$ boys. Putting the 6 back gives $12 + 6 = 18$ girls.
14	D	Work each one out with $x = 3$. $2x + 5$ gives $6 + 5 = 11$, $4x - 2$ gives $12 - 2 = 10$, x^2 gives 9, $x + 9$ gives $3 + 9 = 12$ and $5x - 4$ gives $15 - 4 = 11$. The largest is $x + 9$.
15	C	The square numbers are 1, 4, 9, 16 and each term is 1 more, so the rule is $n^2 + 1$. For the 6th term, $6 \times 6 = 36$, and then $36 + 1 = 37$.

myfreeschool