

Algebra & Sequences: Hard Practice Paper 4 Answers

Q#	Answer	Explanation
1	A	The sequence goes up in 7s, so start with $7n$, giving 7, 14, 21, 28. Each term is 5 more, so the rule is $7n + 5$.
2	D	Take $5x$ from both sides: $3x - 3 = 18$. Add 3: $3x = 21$, so $x = 7$.
3	D	Replace n with 5: $5 \times (5 + 1) = 5 \times 6 = 30$.
4	A	Expand the bracket: $2 \times x = 2x$ and $2 \times (-5) = -10$, giving $6x + 2x - 10$. Then $6x + 2x = 8x$, so the answer is $8x - 10$.
5	C	The gaps are 3, 5, 7, 9 and grow by 2 each time, so the next gap is 11 and the next term is $26 + 11 = 37$.
6	D	$a^2 = 5 \times 5 = 25$ and $b^2 = (-3) \times (-3) = 9$, so the total is $25 + 9 = 34$.
7	C	Solve $9n - 4 = 77$. Adding 4 gives $9n = 81$, so $n = 9$.
8	D	Expand the bracket: $2x + 14 = 3x + 4$. Take $2x$ from both sides: $14 = x + 4$, so $x = 10$.
9	D	The terms are 4, then $4 \times 3 - 5 = 7$, then $7 \times 3 - 5 = 16$, then $16 \times 3 - 5 = 43$.
10	B	The area is $3x \times 4 = 12x$, so $12x = 36$ and $x = 3$.
11	C	Continuing the sequence gives 13 as the 7th term, 21 as the 8th and $13 + 21 = 34$ as the 9th.
12	C	First solve for n : $5n = 37 - 2 = 35$, so $n = 7$. Then $10n = 10 \times 7 = 70$.
13	B	Add $3x$ to both sides: $40 = 7x + 5$. Take 5 away: $35 = 7x$, so $x = 5$.
14	A	The sequence goes down in 4s, so the rule contains $-4n$. Checking $n = 1$: $34 - 4 = 30$, which is correct.
15	C	Take the extra 4 away from 40 to get 36, then halve it: 18 is the smaller number. The larger is $18 + 4 = 22$, and $22 + 18 = 40$.