

Algebra & Sequences: Hard Practice Paper 1 Answers

Q#	Answer	Explanation
1	A	The sequence goes up in 4s, so start with $4n$, giving 4, 8, 12, 16. Each term is 1 more, so the rule is $4n + 1$.
2	C	Take $3x$ from both sides: $2x - 7 = 9$. Add 7: $2x = 16$, so $x = 8$.
3	D	n^2 means $5 \times 5 = 25$, and then $25 + 2 = 27$.
4	A	Expand the bracket: $3 \times 2a = 6a$ and $3 \times 4 = 12$, giving $6a + 12 - 5a$. Then $6a - 5a = a$, so the answer is $a + 12$.
5	C	Two pens cost $2 \times 30 = 60p$, so the ruler costs $95 - 60 = 35p$.
6	C	Each term is 3 times the one before, so the next term is $54 \times 3 = 162$.
7	B	$x^2 = (-3) \times (-3) = 9$ and $4x = 4 \times (-3) = -12$, so $9 + (-12) = -3$.
8	C	Solve $3n + 7 = 52$. Taking 7 away gives $3n = 45$, so $n = 15$.
9	A	Divide both sides by 4: $x + 3 = 8$. Then take 3 from both sides: $x = 5$.
10	D	Add the last two terms: $13 + 21 = 34$.
11	A	The perimeter is $2 \times (\text{length} + \text{width}) = 2(2x + x + 3) = 2(3x + 3) = 6x + 6$.
12	D	The terms are 7, then $7 \times 2 - 3 = 11$, then $11 \times 2 - 3 = 19$, then $19 \times 2 - 3 = 35$.
13	B	Add x to both sides: $3x + 5 = 17$. Take 5 away: $3x = 12$, so $x = 4$.
14	A	The sequence goes down in 7s, so the rule contains $-7n$. Checking $n = 1$: $107 - 7 = 100$, which is correct.
15	D	Ben's age plus 3 times it makes 4 equal parts, so one part is $32 \div 4 = 8$. Ben is 8 and Ann is $3 \times 8 = 24$.