

A2.A.29: Sequences: Identify an arithmetic or geometric sequence and find the formula for its n th term

- 1 What is a formula for the n th term of sequence B shown below?

$$B = 10, 12, 14, 16, \dots$$

- 1) $b_n = 8 + 2n$
 - 2) $b_n = 10 + 2n$
 - 3) $b_n = 10(2)^n$
 - 4) $b_n = 10(2)^{n-1}$
- 2 A sequence has the following terms: $a_1 = 4$, $a_2 = 10$, $a_3 = 25$, $a_4 = 62.5$. Which formula represents the n th term in the sequence?
- 1) $a_n = 4 + 2.5n$
 - 2) $a_n = 4 + 2.5(n - 1)$
 - 3) $a_n = 4(2.5)^n$
 - 4) $a_n = 4(2.5)^{n-1}$
- 3 What is the formula for the n th term of the sequence $54, 18, 6, \dots$?

- 1) $a_n = 6\left(\frac{1}{3}\right)^n$
- 2) $a_n = 6\left(\frac{1}{3}\right)^{n-1}$
- 3) $a_n = 54\left(\frac{1}{3}\right)^n$
- 4) $a_n = 54\left(\frac{1}{3}\right)^{n-1}$

- 4 A theater has 35 seats in the first row. Each row has four more seats than the row before it. Which expression represents the number of seats in the n th row?
- 1) $35 + (n + 4)$
 - 2) $35 + (4n)$
 - 3) $35 + (n + 1)(4)$
 - 4) $35 + (n - 1)(4)$
- 5 In an arithmetic sequence, $a_4 = 19$ and $a_7 = 31$. Determine a formula for a_n , the n^{th} term of this sequence.

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Answer Section

1 ANS: 1

common difference is 2. $b_n = x + 2n$

$$10 = x + 2(1)$$

$$8 = x$$

REF: 081014a2

2 ANS: 4

$$\frac{10}{4} = 2.5$$

REF: 011217a2

3 ANS: 4

REF: 061026a2

4 ANS: 4

REF: 061520a2

5 ANS:

$$\frac{31 - 19}{7 - 4} = \frac{12}{3} = 4 \quad x + (4 - 1)4 = 19 \quad a_n = 7 + (n - 1)4$$

$$x + 12 = 19$$

$$x = 7$$

REF: 011434a2