

Prove the following True $\forall n \in \mathbb{N}$ using Mathematical Induction.

1. $2 + 4 + 6 + 8 + \dots + 2n = n(n + 1)$

2. $3 + 11 + 19 + 27 + \dots + (8n - 5) = n(4n - 1)$

3. $3 + 8 + 13 + 18 + \dots + (5n - 2) = \frac{n}{2}(5n + 1)$

4. 2, 51, 190, 467, 930, 1627, 2606, ...

Find the General Term

Find a_{12}

5. -5, -20, -67, -164, -329, -580, -935, ...

Find the General Term

Find a_{14}