

Generating Sequences

For each of the sequences given, decide whether it is special, arithmetic, quadratic or geometric, then write down the next two terms.

- (a) 1, 1, 2, 3, 5, 8, ...
- (b) 4, 7, 10, 13, ...
- (c) 2, 4, 8, 16, ...
- (d) 10, 8, 6, 4, 2, ...
- (e) 1, 3, 6, 10, 15, ...
- (f) 160, 80, 40, 20, ...
- (g) 2, 5, 10, 17, ...
- (h) 1, 3, 5, 7, 9, ...

Generate the first four terms of the sequences with nth terms:

- (a) $2n$
- (b) $3n - 1$
- (c) n^2
- (d) $20 - n$
- (e) $7 - 3n$
- (f) $n^2 + 5n$
- (g) $2n^2 - 1$
- (h) $\frac{n(n+1)}{2}$

Generate the 6th and 20th terms of the sequences with nth terms:

- (a) $4n - 1$
- (b) $n + 10$
- (c) $1 + n^2$
- (d) $50 - 5n$
- (e) $-1 - n$
- (f) $n^2 - 2n$
- (g) $3n^2 + n + 1$
- (h) $\frac{n+1}{n+2}$

- (a) Find the first term in the sequence with nth term $5n + 7$ that is greater than 250.
- (b) Find the first term in the sequence with nth term $150 - 8n$ that is a negative number.
- (c) Find the only number that is in both the sequences with nth term rules $2n - 9$ and $17 - 7n$.

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