

Write the n th term of a linear sequence



Write the n th term of a linear sequence

1. Which of these sequences are linear?

2, 4, 8, 16, 32, ...

4, 6, 8, 10, 12, ...

2, 4, 6, 8, 10, ...

2, 4, 6, 10, 16, ...

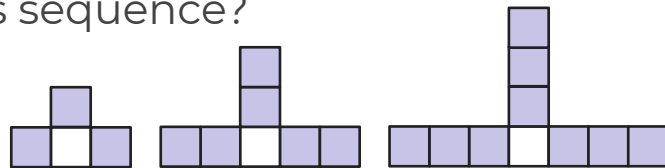
2. Find the n th term for each linear sequence.

a) 4, 8, 12, 16, 20, ...

b) 7, 11, 15, 19, 23, ...

c) $-3, 1, 5, 9, 13, \dots$

3. What is the rule for the n th term of this sequence?



This table may help you.

Pattern number	1	2	3	4	n
Shaded squares					
Unshaded squares					
Total squares					

Link the features of the tile pattern with the n th term you found.



Write the n th term of a linear sequence

4. Teddy says

'6, 2, -2, -6, -10, ... can't be a linear sequence as it's not going up by the same amount each time'.

Do you agree? Why?

5. Find the n th term.

a) 7, 5, 3, 1, -1, ...

b) -8, -13, -18, -23, -28, ...

c) 0, -3, -6, -9, -12, ...

6. Match the sequence to the n th term.

3.5, 4, 4.5, 5, 5.5, ...

$5n + 0.3$

0.8, 1.3, 1.8, 2.3, 2.8, ...

$0.5n + 3$

5.3, 10.3, 15.3, 20.3, 25.3, ...

$0.5n + 0.3$

7. All of these sequences are linear.
Find the n th term.

a) 5, —, —, 23, —, ...

b) 7, —, -1, —, —, ...

c) 4, —, —, —, 10, ...



Answers



Write the nth term of a linear sequence

1. Which of these sequences are linear?

2, 4, 8, 16, 32, ...	4, 6, 8, 10, 12, ...
2, 4, 6, 8, 10, ...	2, 4, 6, 10, 16, ...

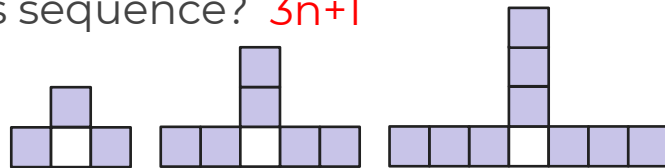
2. Find the nth term for each linear sequence.

a) 4, 8, 12, 16, 20, ... $4n$

b) 7, 11, 15, 19, 23, ... $4n + 3$

c) -3, 1, 5, 9, 13, ... $4n - 7$

3. What is the rule for the nth term of this sequence? $3n+1$



This table may help you.

Pattern number	1	2	3	4	n
Shaded squares	3	6	9	12	$3n$
Unshaded squares	1	1	1	1	1
Total squares	4	7	10	13	$3n+1$

Link the features of the tile pattern with the nth term you found.

Shaded squares = $3n$ Unshaded square = 1



Write the nth term of a linear sequence

4. Teddy says

'6, 2, -2, -6, -10, ... can't be a linear sequence as it's not going up by the same amount each time'.

Do you agree? Why?

No, sequences are still linear if decreasing by the same amount.

5. Find the nth term.

a) 7, 5, 3, 1, -1, ... $-2n + 9$

b) -8, -13, -18, -23, -28, ... $-5n - 3$

c) 0, -3, -6, -9, -12, ... $-3n + 3$

6. Match the sequence to the nth term.

3.5, 4, 4.5, 5, 5.5, ...

$5n + 0.3$

0.8, 1.3, 1.8, 2.3, 2.8, ...

$0.5n + 3$

5.3, 10.3, 15.3, 20.3, 25.3, ...

$0.5n + 0.3$

7. All of these sequences are linear.
Find the nth term.

a) 5, __, __, 23, __, ... $6n - 1$

b) 7, __, -1, __, __, ... $-4n + 11$

c) 4, __, __, __, 10, ... $1.5n + 2.5$

