

Generate sequences from a rule

1 Find the first three terms of these sequences by substituting $n = 1$, $n = 2$ and $n = 3$ into them.

a)

n	1	2	3
$4n$			

b)

n	1	2	3
$2n + 3$			

c)

n	1	2	3
$7n - 1$			

2 Substitute $n = 1$, $n = 2$, $n = 3$, $n = 4$ and $n = 5$ into each of these expressions.

a)

n	1	2	3	4	5
$5n$					

b)

n	1	2	3	4	5
$5n - 5$					

c)

n	1	2	3	4	5
$5n + 2$					

What do you notice about your answers?

What is the same? What is different?

3 Find the first five terms of the sequences given by these rules.

a) $6n - 10$

b) $7 + 3n$

c) $0.5n - 1$

d) $2.3 + 4n$

e) $\frac{n + 5}{4}$

f) $\frac{n}{4} + 5$

How did you work this out? Talk to a partner



4 Find the first four terms of the sequences given by these rules.

a) $20 - 2n$

b) $1 - 4n$

5 Which of these rules do you think will produce ascending sequences?

Which will produce descending sequences? Label the cards.

$3n - 9$

$9 - 3n$

$-9 + 3n$

$-3n - 9$

How did you decide?

Check your answer by substituting several consecutive values of n .

6 Tick the rules that will produce linear sequences.

$\frac{n-7}{2}$ $(n-7)^2$ $n^2 - 7$ $0.2n - 7$ $2 - 7n$ $\frac{n}{2} - 7$

How did you work this out? Talk to a partner.



7 Here is a rule for a sequence.

$$4n - 10$$

a) In which position would the term 2 be? _____

b) What would the 50th term of the sequence be?

c) Would the number 77 be in this sequence? Explain how you know.

d) Would the number 68 be in this sequence? Explain how you know.

8 Here is an expression for a sequence.

$$77n - 96$$

a) What is the difference between the 1,000th term and the 990th term?

b) Write two more terms that will have the same difference.

Can you find a rule?

