

Explain the term-to-term rule

1 Describe how these sequences change from one term to the next.

Are the sequences linear or non-linear? Tick your answers.

a) 73, 65, 57, 49 ...

linear non-linear

b) 48, 24, 12, 6 ...

linear non-linear

c) 1, 3, 9, 27, 81 ...

linear non-linear

d) 4, 7, 11, 18, 29 ...

linear non-linear

e) $\frac{1}{2}$, 1, $1\frac{1}{2}$...

linear non-linear

2 The term-to-term rule of a sequence is:

The next term is found by multiplying the previous term by 4

The first term of the sequence is 4

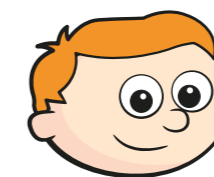
Rosie uses the term-to-term rule and writes out the sequence

4, 8, 12, 16 ...

a) What mistake has Rosie made?

b) Write the correct sequence using the term-to-term rule.

3 Ron is describing the sequence 5, 10, 20, 40, 80 ...



First you add 5, then add 10, then add 20, then add 40 ...

Describe the sequence in a different way.

- 4 The first two terms of a Fibonacci sequence are 1 and 1
The term-to-term rule is:

To find the next term, add the two previous terms together.

- a) Write the first seven terms of the sequence.

- b) What is the first term that is greater than 30?

- 5 A sequence starts with 1, 3 ...
The children describe the term-to-term rule of the sequence.

Whitney: The term-to-term rule is: add 2 to the previous term

Annie: The term-to-term rule is: double the previous term and add 1

Teddy: The term-to-term rule is: multiply the previous term by 3

Alex: The term-to-term rule is: multiply the previous term by 4, then subtract 1

- a) Explain why all the children could be correct.

- b) Which children are describing linear term-to-term rules?

- c) Which children are describing non-linear sequences?

- d) Whose sequence would have the greatest 5th term? Why?

- 6 A sequence starts 300, 500, 900, 1700, 3300 ...
Describe the two-step term-to-term rule.

