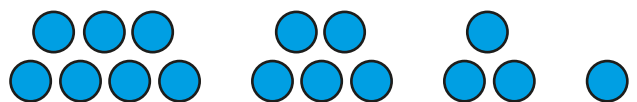
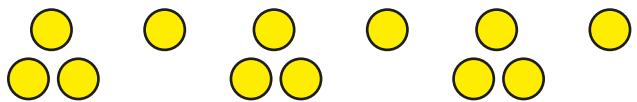


Linear and non-linear sequences

1 Tick the diagrams that show linear sequences.

- a)  ☐
- b)  ☐
- c)  ☐
- d)  ☐

2 Fill in the gaps to describe how each sequence is increasing.

- a) 
 + + +

Is the sequence linear or non-linear? Explain how you know.

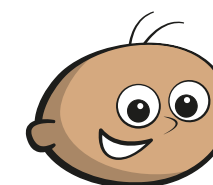
- b) 
 + + +

Is the sequence linear or non-linear? Explain how you know.

3 Is the sequence linear or non-linear?

- a) 3, 9, 15, 21 ...
- b) 1, 3, 6, 10 ...
- c) 81, 72, 63 ...
- d) 12.5, 13, 13.5, 14, 14.5 ...
- e) $3, 3\frac{2}{3}, 4\frac{1}{3}, 5 \dots$
- f) 7, 5, 3, 1, 0 ...

4



This sequence
is linear as there is a
constant difference of 5
between terms.

0, 5, 10, 15, 10, 5, 0, 5, 10, 15, 10, 5, 0 ...

Is Tommy correct? Explain how you know.

5 Write a number for the 3rd term to make the sequence:

a) linear

Position	1	2	3
Term	9	18	

b) non-linear

Position	1	2	3
Term	9	18	

6

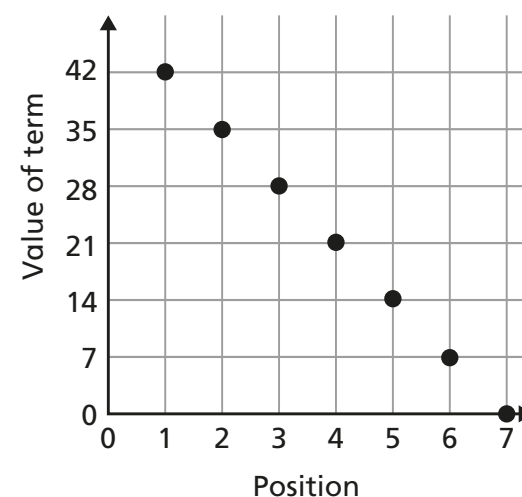
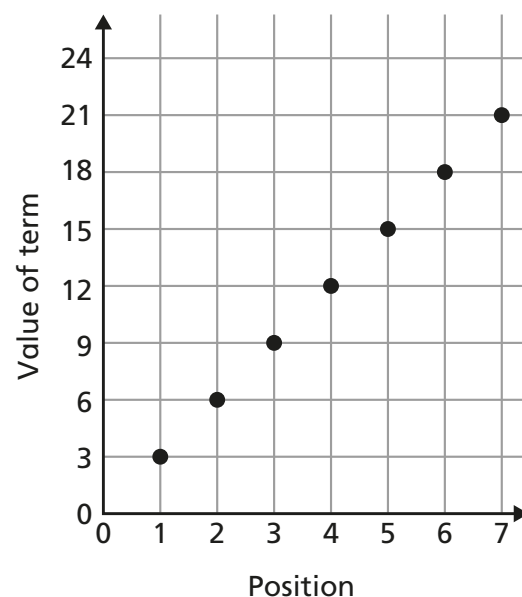
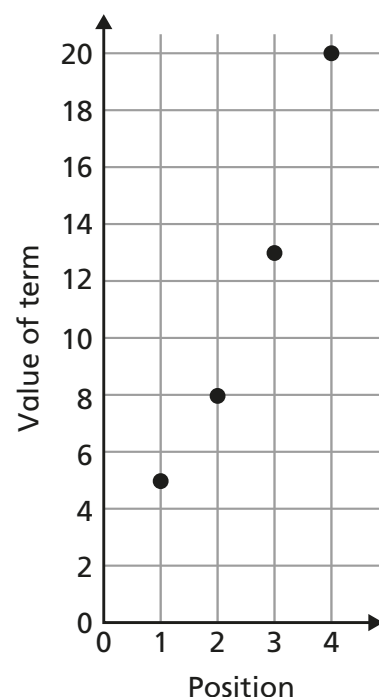
a) Tick the tables that show linear sequences.

Position	1	2	3	4	5
Term	20	17	14	11	8

Position	1	2	3	4	5
Term	2	6	12	20	30

Position	1	2	3	4
Term	0.4	0.8	1.2	1.6

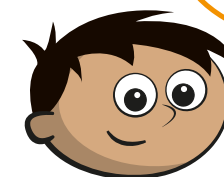
b) Tick the graphs that show linear sequences.



Explain your answers.

7

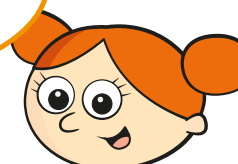
A sequence starts with the terms 4, 8 . . .



Amir

The sequence is linear as it is going up by 4

It is impossible to tell if the sequence is linear or non-linear.



Alex

Who is correct? Explain how you know.

8

a) Write a linear sequence where the 1st term is 75 and the 2nd term is 225

b) Write a non-linear sequence where the 1st term is 75 and the 2nd term is 225

Compare sequences with a partner. Is it possible to come up with more than one sequence for each type? Why?

Predict the 5th term in each of your sequences.

