Year 7 Maths – Autumn 2023

Module 2 - Sequences

Topic/Skill	Definition/Tips	Examples
Exploring Sequences		
Sequence	Ordered sets of numbers, shapes or other mathematical objects, arranged according to a specific rule.	2, 5, 8, 11, 14, … 1, 10, 100, 1000, …
Linear sequence	A linear number sequence is a series of values where each number i**ncreases or decreases by the <u>same</u> amount** each time.	2, 4, 6, 8, 10, … is a linear sequence
Non-linear sequence	A non-linear number sequence is a series of values where each number **increases or decreases by a <u>varied</u> / <u>different</u> amount** each time	1, 4, 9, 16, 25, … is a non-linear sequence
Ascending	Increase in value.	3, 7, 9, 11, 131 are in **ascending** order
Descending	Decrease in value.	131, 11, 9, 7, 3 are in **descending** order
Term*	One of the values that features in a **sequence**.	2, 5, 8, … the 2nd **term** is 5
Position	Where in a **sequence** the **term** is located.	7, 6, 5, … the **term** in the 3rd **position** is 5
Term-to-term rule	Rule which allows you to find the next **term** in a **sequence** if you know the previous **term**.	1st **term** is 2. **Term-to-term rule** is ‘add 3’. **Sequence** is: 2, 5, 8, 11…
Fibonacci	**Sequence** where the next **term** is found by adding up the previous two **terms**.	The **Fibonacci** sequence is: 0,1,1,2,3,5,8,13,21, 34…..

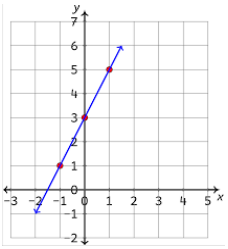
Year 7 Maths Knowledge Organiser Questions:

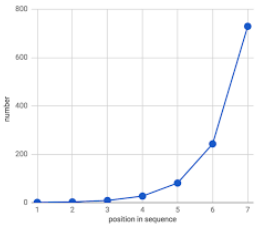
1. Find the next two terms in this linear sequence: 3, 7, 11, _ , _

2. Find the next two terms in these linear sequences:

a) 870, 760, 650, _, _ b) 4.15, 4.35, 4.55, _, _

3. Which of these sequences are linear?



a) b) 

c) 16, 14, 12, 10, 8, …….

d) 0, 1, 1, 2, 3, 5, 8, 13, …..

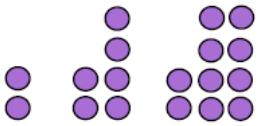
4. Find the next two terms in these geometric (non-linear) sequences:

a) 2, 6, 18, _ , _ b) 180, 18, 1.8, _ , _

5. Find the missing terms in the linear sequence: 2, _ , 8, _ , _ , 17

6. Complete the table to represent the sequence.

If this was shown as a graph, would the points form a straight line?



Term	1	2	3	4
Number of circles				

7. Write the first ten terms of a sequence that increases by 6 and has the first term 2.

8. What is the term-to-term rule for these sequences?

a) 17, 15, 13, 11, 9, … b) 1, 5, 9, 13, 17, … c) 3, 6, 12, 24, …

Answers

1) 15, 19 **2)** a) 540, 430 b) 4.75, 4.95 **3)** a) and c) **4)** a) 54, 162 b) 0.18, 0.018 **5)** 2, 5, 8, 11, 14, 17

Term	1	2	3	4
Number of circles	2	6	10	14

6) Yes it will. **7)** 2, 8, 14, 20, 26, 32, 38, 44, 50, 56 **8)** a) subtract 2 b) add four c) double or multiply by 2.