

# 100. Sequences - Term to Term Rules

## Practice Questions:

1. Write down the next three terms in the sequence:  
2, 5, 8, 11, ...

2. Write down the next three terms in the sequence:  
20, 17, 14, 11, ...

3. A sequence starts at  $-3$  and increases by 4 each time. Write down the first five terms.

4. A sequence goes down by 7 each time. The first term is 100. Write down the first five terms.

5. The Fibonacci sequence starts 1, 1, 2, 3, 5, ...  
Write down the next three terms.

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## Practice Questions:

6. Another Fibonacci-type sequence starts:  
4, 6, 10, ... Write down the next three terms.

7. Write down the first six square numbers.

8. Write down the next three terms of the sequence:  
9, 16, 25, 36, ...

9. Write down the next term of the sequence:  
0.5, 1, 2, 4, ...

10. Continue the triangular number sequence:  
1, 3, 6, 10, 15, ... (give the next three terms)

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## Scenario Questions:

1. A taxi fare starts at £3 and goes up by £2 for each mile travelled. Write down the fares for 1, 2, 3, 4 and 5 miles.

2. A swimming pool has spectator seating. There are 120 seats in the front row. Each row behind has 4 fewer seats than the row in front. Write down the number of seats in the first four rows.

3. A savings account starts with £10. After each week, £5 is added. Write down the amount of money in the account after 1, 2, 3, and 4 weeks.

4. A staircase is built with blocks. The first step has 2 blocks, the second has 5 blocks, the third has 8 blocks, and so on. Write down the number of blocks in the fourth and fifth steps.

5. A farmer records the number of rabbits in a field. Each month, the number is the sum of the previous two months. The first two months have 2 and 3 rabbits. How many rabbits are there in month three?

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## Scenario Questions:

6. A sunflower grows 2 cm in the first week, 2 cm in the 2nd week, then 4 cm in the 3rd week. After this, each week the growth is the sum of the previous two weeks. Write down the growth for the 4th week.

7. A square patio is built using square tiles. The first patio has 1 tile, the second has 4 tiles, the third has 9 tiles, and so on. Write down the number of tiles in the fourth, fifth, and sixth patios.

8. A cinema has seating arranged in rows. The first row has 20 seats, the second row has 18 seats, the third row has 16 seats, and so on. If the back row has 8 seats, how many rows of seats are there?

9. A pyramid of cans is stacked. The top layer has 1 can, the second has 3, the third has 6, the fourth has 10. Write down the number of cans in the fifth and sixth layers.

10. A school is handing out badges. In the first week, 2 badges are given, in the second week 4, in the third week 6, and so on. Write down how many badges will be given in weeks 4, 5, and 6.

# ANSWERS

## **Topic 100. Sequences - Term to Term Rules**

### **Practice Questions:**

1. 14, 17, 20	6. 16, 26, 42
2. 8, 5, 2	7. 1, 4, 9, 16, 25, 36
3. -3, 1, 5, 9, 13	8. 49, 64, 81
4. 100, 93, 86, 79, 72	9. 8
5. 8, 13, 21	10. 21, 28, 36

### **Scenario Questions:**

1. £5, £7, £9, £11, £13	6. 6, 10, 16
2. 120, 116, 112, 108	7. 16, 25, 36
3. £15, £20, £25, £30	8. 7
4. 11, 14	9. 15, 21
5. 5, 8, 13	10. 8, 10, 12

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