



Types of Sequences



REVISE THIS TOPIC



1 Here are the first two terms of a sequence

2 6 ...

(a) Michael assumes the sequence is an arithmetic sequence. Using Michael's assumption, work out the next two terms.

$$2 \xrightarrow{+4} 6 \xrightarrow{+4} 10 \xrightarrow{+4} 14$$

..... 10, 14 (2)

(b) Jess assumes the sequence is a geometric sequence. Using Jess's assumption, work out the next two terms.

$$2 \xrightarrow{\times 3} 6 \xrightarrow{\times 3} 18 \xrightarrow{\times 3} 54$$

..... 18, 54 (2)

(c) Gabby assumes the sequence is a Fibonacci sequence. Using Gabby's assumption, work out the next two terms.

2 6 8 14

..... 8, 14 (2)

(Total for Question 1 is 6 marks)



2 Here are the first two terms of a geometric sequence

20 10 ...

Work out the 4th term of the sequence.

$$20 \xrightarrow{\div 2} 10 \xrightarrow{\div 2} 5 \xrightarrow{\div 2} 2.5$$

.....
2.5

(Total for Question 2 is 2 marks)

3 Here are the first two terms of a Fibonacci sequence

2 5 ...

Work out the 4th term of the sequence.

$$2 \quad 5 \quad 7 \quad 12$$

.....
12

(Total for Question 3 is 2 marks)

4 Here are the first two terms of an arithmetic sequence

2 4 ...

Work out the 4th term of the sequence.

$$2 \xrightarrow{+2} 4 \xrightarrow{+2} 6 \xrightarrow{+2} 8$$

.....
8

(Total for Question 4 is 2 marks)



5 Here are the first two terms of a Fibonacci sequence

1 3 ...

Work out the 4th term of the sequence.

1 3 4 7

..... 7

(Total for Question 5 is 2 marks)

6 Here are the first two terms of an arithmetic sequence

3 9 ...

Work out the 4th term of the sequence.

3 $\xrightarrow{+6}$ 9 $\xrightarrow{+6}$ 15 $\xrightarrow{+6}$ 21

..... 21

(Total for Question 6 is 2 marks)

7 Here are the first two terms of a geometric sequence

8 16 ...

Work out the 4th term of the sequence.

8 $\xrightarrow{\times 2}$ 16 $\xrightarrow{\times 2}$ 32 $\xrightarrow{\times 2}$ 64

..... 64

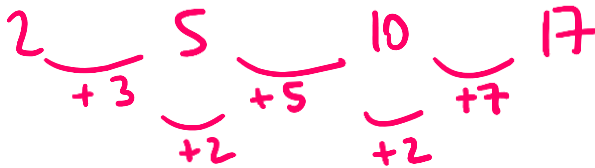
(Total for Question 7 is 2 marks)



8 Here are the first three terms of a quadratic sequence

2 5 10 ...

Work out the 4th term of the sequence.



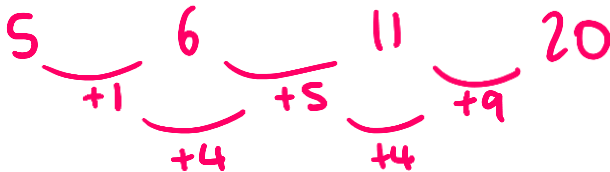
17

(Total for Question 8 is 2 marks)

9 Here are the first three terms of a quadratic sequence

5 6 11 ...

Work out the 4th term of the sequence.



20

(Total for Question 9 is 2 marks)



10 Here are the first three terms of a quadratic sequence

8 18 30 ...

Work out the 4th term of the sequence.

$$\begin{array}{cccccc}
 8 & \frown & 18 & \frown & 30 & \frown & 44 & \frown & 60 \\
 & +10 & & +12 & & +14 & & +16 & \\
 & \frown & & \frown & & \frown & & \frown & \\
 & +2 & & +2 & & +2 & & &
 \end{array}$$

60

(Total for Question 10 is 3 marks)

11 Here are the first three terms of a quadratic sequence

30 22 9 ...

Work out the 4th term of the sequence.

$$\begin{array}{cccccc}
 30 & \frown & 22 & \frown & 9 & \frown & -9 & \frown & -32 \\
 & -8 & & -13 & & -18 & & -23 & \\
 & \frown & & \frown & & \frown & & \frown & \\
 & -5 & & -5 & & -5 & & &
 \end{array}$$

-32

(Total for Question 11 is 3 marks)



12 The third and fourth terms of a geometric sequence are shown below.

... ... 12 24

Work out the 1st term of the sequence.

$$\begin{array}{cccc}
 3 & 6 & 12 & 24 \\
 \swarrow & \swarrow & \swarrow & \\
 \div 2 & \div 2 & \div 2 &
 \end{array}$$

3

(Total for Question 12 is 2 marks)

13 The third and fourth terms of an arithmetic sequence are shown below.

... ... 5 15

Work out the 1st term of the sequence.

$$\begin{array}{cccc}
 -15 & -5 & 5 & 15 \\
 \swarrow & \swarrow & \swarrow & \\
 -10 & -10 & -10 &
 \end{array}$$

-15

(Total for Question 13 is 2 marks)

14 The third and fourth terms of a Fibonacci sequence are shown below.

... ... 10 16

Work out the 1st term of the sequence.

$$\begin{array}{l}
 16 - 10 = 6 \\
 10 - 6 = 4
 \end{array}$$

4

(Total for Question 14 is 2 marks)



15 Here are some sequences.

Sequence A

2 4 6 8 10

Sequence B

2 4 8 16 32

Sequence C

2 4 6 10 12

Sequence D

2 4 6 12 24

Sequence E

2 4 8 14 22

Sequence F

2 4 6 10 16

Match each type of sequence in the table to the correct sequence above.

Type of Sequence	Sequence Letter
Arithmetic Sequence	A
Quadratic Sequence	E
Geometric Sequence	B
Fibonacci Sequence	F



(Total for Question 15 is 4 marks)