



Term to Term Rule



← REVISE THIS TOPIC



1 The first term of a sequence is 1

1

The rule for continuing the sequence is

multiply the previous term by 2 then add 3

(a) Work out the second term of the sequence.

$$1 \times 2 = 2$$
$$2 + 3 = 5$$

5

(1)

(b) Work out the third term of the sequence.

$$5 \times 2 = 10$$
$$10 + 3 = 13$$

13

(1)

(c) Work out the fourth term of the sequence.

$$13 \times 2 = 26$$
$$26 + 3 = 29$$

29

(1)

(Total for Question 1 is 3 marks)





2 The first term of a sequence is 24

24

The rule for continuing the sequence is

subtract 4 from the previous term and then divide by 2

(a) Work out the third term of the sequence.

$$24 - 4 = 20$$

$$20 \div 2 = 10$$

$$10 - 4 = 6$$

$$6 \div 2 = 3$$

3

(2)

The second term of a different sequence is 46

.... 46

The rule for continuing the sequence is

multiply the previous term by 5 then add 1

(b) Work out the first term of the sequence.

-1 then $\div 5$

$$46 - 1 = 45$$

$$45 \div 5 = 9$$

9

(2)

(Total for Question 2 is 4 marks)





3 The first term of a sequence is 3

3

The rule for continuing the sequence is

add 4 to the previous term and then multiply by 3

(a) Work out the third term of the sequence.

$$\begin{aligned}
 3 + 4 &= 7 \\
 7 \times 3 &= 21 \\
 21 + 4 &= 25 \\
 25 \times 3 &= 75
 \end{aligned}$$

75

(2)

The second term of a different sequence is 9

.... 9

The rule for continuing the sequence is

subtract 1 from the previous term and then divide by 2

(b) Work out the first term of the sequence.

$$\begin{aligned}
 &\times 2 \text{ then } + 1 & 9 \times 2 &= 18 \\
 & & 18 + 1 &= 19
 \end{aligned}$$

19

(2)

(Total for Question 3 is 4 marks)



4 The first term of a sequence is 30



30

The rule for continuing the sequence is

divide the previous term by 2 and then add 10

(a) Work out the third term of the sequence.

$$30 \div 2 = 15$$

$$15 + 10 = 25$$

$$25 \div 2 = 12.5$$

$$12.5 + 10 = 22.5$$

22.5

(2)

The third term of a different sequence is 750

.... 750

The rule for continuing the sequence is

add 5 to the previous term then multiply by 10

(b) Work out the first term of the sequence.

$\div 10$ then $- 5$

$$750 \div 10 = 75$$

$$75 - 5 = 70$$

$$70 \div 10 = 7$$

$$7 - 5 = 2$$

2

(3)

(Total for Question 4 is 5 marks)





5 The second term of a sequence is 11

.... 11

The rule for continuing the sequence is

multiply the previous term by 5 then subtract 4

(a) Work out the first term of the sequence.

$$\begin{array}{l}
 +4 \text{ then } \div 5 \qquad 11 + 4 = 15 \\
 15 \div 5 = 3
 \end{array}$$

$$\begin{array}{r}
 3 \\
 \hline
 (2)
 \end{array}$$

(a) Work out the third term of the sequence.

$$\begin{array}{l}
 11 \times 5 = 55 \\
 55 - 4 = 51
 \end{array}$$

$$\begin{array}{r}
 51 \\
 \hline
 (1)
 \end{array}$$

(b) Work out the fourth term of the sequence.

$$\begin{array}{l}
 51 \times 5 = 255 \\
 255 - 4 = 251
 \end{array}$$

$$\begin{array}{r}
 251 \\
 \hline
 (1)
 \end{array}$$

(Total for Question 5 is 4 marks)



6 The first and third terms of a sequence are shown below.



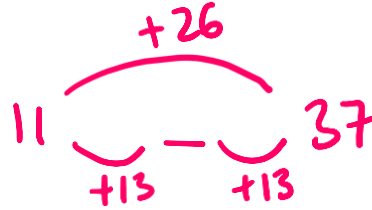
11 37

The rule for continuing the sequence is

add k to the previous term

Work out the value of k .

$$\begin{array}{l}
 37 - 11 = 26 \\
 26 \div 2 = 13
 \end{array}$$



$k =$ 13

(Total for Question 6 is 2 marks)

7 The first and fourth terms of a sequence are shown below.



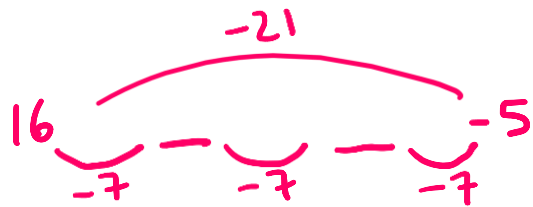
16 -5

The rule for continuing the sequence is

subtract m from the previous term

Work out the value of m .

$$\begin{array}{l}
 16 - (-5) = 21 \\
 21 \div 3 = 7
 \end{array}$$



$m =$ 7

(Total for Question 7 is 3 marks)



8 The first term of a sequence is 6



6

The rule for continuing the sequence is

multiply the previous term by 2 then subtract 7

Work out the value of the first negative term of the sequence.

$$6 \times 2 - 7 = 5$$

$$5 \times 2 - 7 = 3$$

$$3 \times 2 - 7 = -1$$

..... -1
 (Total for Question 8 is 3 marks)

9 The first term of a sequence is 14



14

The rule for continuing the sequence is

add 2 to the previous term then divide by 2

Work out the value of the first term of the sequence that is not an integer.

$14 + 2 = 16$	$8 + 2 = 10$	$5 + 2 = 7$
$16 \div 2 = 8$	$10 \div 2 = 5$	$7 \div 2 = 3.5$

3.5

3.5

.....
 (Total for Question 9 is 3 marks)



10 The first term of a sequence is -9



-9

The rule for continuing the sequence is

multiply the previous term by 3 then add 20

Work out the value of the first positive term of the sequence.

$$\begin{array}{lll}
 -9 \times 3 = -27 & -7 \times 3 = -21 & -1 \times 3 = -3 \\
 -27 + 20 = -7 & -21 + 20 = -1 & -3 + 20 = 17
 \end{array}$$

17

(Total for Question 10 is 3 marks)

11 The third term of a sequence is 4



.... 4

The rule for continuing the sequence is

add 4 to the previous term then multiply by 2

Work out the first term of the sequence.

$$\begin{array}{ll}
 \div 2 \text{ then } -4 & 4 \div 2 = 2 \\
 & 2 - 4 = -2 \\
 & -2 \div 2 = -1 \\
 & -1 - 4 = -5
 \end{array}$$

-5

(Total for Question 11 is 3 marks)





12 The first term of sequence **A** and sequence **B** is 6

Sequence **A** 6

Sequence **B** 6

The rules for continuing the sequences are

Sequence **A** add 3 to the previous term then multiply by 2

Sequence **B** multiply the previous term by 3 then subtract 3

Show that the third terms in both sequences are equal.

$$\begin{aligned} \textcircled{\text{A}} \quad & 6 + 3 = 9 \\ & 9 \times 2 = 18 \\ & 18 + 3 = 21 \\ & 21 \times 2 = \underline{42} \end{aligned}$$

$$\begin{aligned} \textcircled{\text{B}} \quad & 6 \times 3 = 18 \\ & 18 - 3 = 15 \\ & 15 \times 3 = 45 \\ & 45 - 3 = \underline{42} \end{aligned}$$

Both third terms are 42

(Total for Question 12 is 4 marks)

