



Term to Term Rule



REVISE THIS TOPIC



1 The term-to-term rule for a sequence is

Multiply by 2 then add 3

The first term of the sequence is 1

1 (a) Work out the second term of the sequence. [1 mark]

$$1 \times 2 = 2$$

$$2 + 3 = 5$$

Answer 5

1 (b) Work out the third term of the sequence. [1 mark]

$$5 \times 2 = 10$$

$$10 + 3 = 13$$

Answer 13

1 (c) Work out the fourth term of the sequence. [1 mark]

$$13 \times 2 = 26$$

$$26 + 3 = 29$$

Answer 29





2 (a) The term-to-term rule for a sequence is

Subtract 4 and then divide by 2

The first term of the sequence is 24

Work out the third term of the sequence.

[2 marks]

$$24 - 4 = 20$$

$$20 \div 2 = 10$$

$$10 - 4 = 6$$

$$6 \div 2 = 3$$

Answer 3

2 (b) The term-to-term rule for a different sequence is

Multiply by 5 then add 1

The second term of the sequence is 46

Work out the first term of the sequence.

[2 marks]

$$-1 \text{ then } \div 5$$

$$46 - 1 = 45$$

$$45 \div 5 = 9$$

Answer 9





3 (a) The term-to-term rule for a sequence is

Add 4 then multiply by 3

The first term of the sequence is 3

Work out the third term of the sequence.

[2 marks]

$$3 + 4 = 7$$

$$7 \times 3 = 21$$

$$21 + 4 = 25$$

$$25 \times 3 = 75$$

Answer 75

3 (b) The term-to-term rule for a different sequence is

Subtract 1 then divide by 2

The second term of the sequence is 9

Work out the first term of the sequence.

[2 marks]

x 2 then + 1

$$9 \times 2 = 18$$

$$18 + 1 = 19$$

Answer 19





4 (a) The term-to-term rule for a sequence is

Divide by 2 then add 10

The first term of the sequence is 30

Work out the third term of the sequence.

[2 marks]

$$30 \div 2 = 15$$

$$15 + 10 = 25$$

$$25 \div 2 = 12.5$$

$$12.5 + 10 = 22.5$$

Answer 22.5

4 (b) The term-to-term rule for a different sequence is

Add 5 then multiply by 10

The third term of the sequence is 750

Work out the first term of the sequence.

[3 marks]

$\div 10$ then $- 5$

$$750 \div 10 = 75$$

$$75 - 5 = 70$$

$$70 \div 10 = 7$$

$$7 - 5 = 2$$

Answer 2





5 The term-to-term rule for a sequence is

Multiply by 5 then subtract 4

The second term of the sequence is 11

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

[2 marks]

$$+4 \text{ then } \div 5 \qquad 11 + 4 = 15$$
$$15 \div 5 = 3$$

Answer 3

5 (b) Work out the third term for the sequence.

[1 mark]

$$11 \times 5 = 55$$
$$55 - 4 = 51$$

Answer 51

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

[1 mark]

$$51 \times 5 = 255$$
$$255 - 4 = 251$$

Answer 251

$\frac{\quad}{9}$

Turn over ►





6 The term-to-term rule for a sequence is

Add k

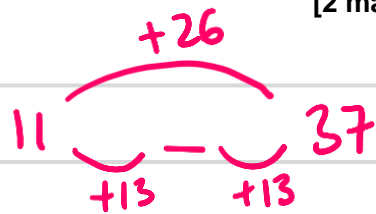
The first term of the sequence is 11
The third term of the sequence is 37

Work out the value of k .

[2 marks]

$$37 - 11 = 26$$

$$26 \div 2 = 13$$



$$k = \underline{\quad 13 \quad}$$

7 The term-to-term rule for a sequence is

Subtract m

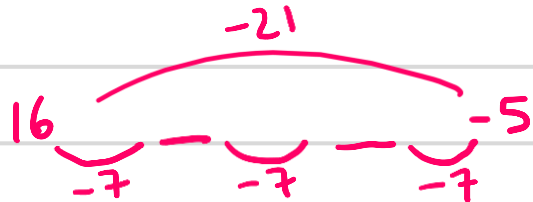
The first term of the sequence is 16
The fourth term of the sequence is -5

Work out the value of m .

[3 marks]

$$16 - (-5) = 21$$

$$21 \div 3 = 7$$



$$m = \underline{\quad 7 \quad}$$





8 The term-to-term rule for a sequence is

Multiply by 2 then subtract 7

The first term of the sequence is 6

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

[3 marks]

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

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

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

Answer -1

9 The term-to-term rule for a sequence is

Add 2 then divide by 2

The first term of the sequence is 14

Work out the value of the first term of the sequence that is not an integer. [3 marks]

$$14 + 2 = 16$$

$$8 + 2 = 10$$

$$5 + 2 = 7$$

$$16 \div 2 = 8$$

$$10 \div 2 = 5$$

$$7 \div 2 = 3.5$$

Answer 3.5

Turn over ►





10 The term-to-term rule for a sequence is

Multiply by 3 then add 20

The first term of the sequence is -9

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

[3 marks]

$$\begin{array}{r}
 -9 \times 3 = -27 \quad -7 \times 3 = -21 \quad -1 \times 3 = -3 \\
 \hline
 -27 + 20 = -7 \quad -21 + 20 = -1 \quad -3 + 20 = 17
 \end{array}$$

Answer 17

11 The term-to-term rule for a sequence is

Add 4 then multiply by 2

The third term of the sequence is 4.

Work out the first term of the sequence.

[3 marks]

$$\begin{array}{r}
 \div 2 \text{ then } -4 \quad 4 \div 2 = 2 \\
 \hline
 2 - 4 = -2 \\
 \hline
 -2 \div 2 = -1 \\
 \hline
 -1 - 4 = -5
 \end{array}$$

Answer -5





12 The term-to-term rules for two sequences are shown below.

Sequence A

Add 3 then multiply by 2

Sequence B

Multiply by 3 then subtract 3

The first term of both sequences is 6

Show that the third terms in both sequences are equal.

[4 marks]

$$\textcircled{A} \quad 6 + 3 = 9$$
$$9 \times 2 = 18$$

$$18 + 3 = 21$$

$$21 \times 2 = \underline{42}$$

$$\textcircled{B} \quad 6 \times 3 = 18$$

$$18 - 3 = 15$$

$$15 \times 3 = 45$$

$$45 - 3 = \underline{42}$$

Both third terms are 42

