1049 - (0580-S 2013-Paper 2 (Extended)/2-Q3) - *SEQUENCES*

The first five terms of a sequence are shown below.

13 9 5 1 –3

Find the *n*th term of this sequence.

Answer ..... [2]

1050 - (0580-S 2015-Paper 2 (Extended)/1-Q11) - *SEQUENCES*

Find the *n*th term of each sequence.

(a) 4, 8, 12, 16, 20, ...

Answer(a) ..... [1]

(b) 11, 20, 35, 56, 83, ...

Answer(b) ..... [2]

1051 - (0580-W 2013-Paper 2 (Extended)/1-Q9) - *SEQUENCES*

Find the nth term in each of the following sequences.

(a) $\frac{1}{3}, \quad \frac{2}{4}, \quad \frac{3}{5}, \quad \frac{4}{6}, \quad \frac{5}{7}, \quad \ldots\ldots$

Answer(a) ..... [1]

(b) 0, 3, 8, 15, 24, ...

Answer(b) ..... [2]

1052 - (0580-S 2016-Paper 2 (Extended)/1-Q15) - *SEQUENCES*

$$7, \quad 5, \quad 3, \quad 1, \quad -1, \quad \ldots$$

(a) Find the next term in this sequence.

..... [1]

(b) Find the nth term of the sequence.

..... [2]

1053 - (0580-S 2016-Paper 2 (Extended)/2-Q18) - *SEQUENCES*

Find the nth term of each of these sequences.

(a) 16, 19, 22, 25, 28, …

..... [2]

(b) 1, 3, 9, 27, 81, …

..... [2]

1054 - (0580-W 2014-Paper 2 (Extended)/3-Q11) - *SEQUENCES*

(a) Here are the first three terms of a sequence.

$U_1 = 1^3$ $U_2 = 1^3 + 2^3$ $U_3 = 1^3 + 2^3 + 3^3$

The nth term is given by $U_n = \frac{1}{4}n^2 (n + 1)^2$.

Work out the value of U_{39} .

Answer(a) U_{39} = ... [2]

(b) Here are the first three terms of another sequence.

$V_1 = 2^3$ $V_2 = 2^3 + 4^3$ $V_3 = 2^3 + 4^3 + 6^3$

By comparing this sequence with the sequence in **part (a)**, find a formula for the nth term, V_n .

Answer(b) V_n = ... [1]

1055 - (0580-S 2014-Paper 2 (Extended)/2-Q20) - *SEQUENCES*

32 25 18 11 4

These are the first 5 terms of a sequence.

Find

(a) the 6th term,

Answer(a) ..... [1]

(b) the nth term,

Answer(b) ..... [2]

(c) which term is equal to –332.

Answer(c) ..... [2]

1056 - (0580-S 2015-Paper 2 (Extended)/2-Q8) - *SEQUENCES*

5, 11, 21, 35, 53, ...

Find the nth term of this sequence.

Answer ..... [2]

1057 - (0580-W 2016-Paper 2 (Extended)/1-Q19) - *SEQUENCES*

Find the nth term of each sequence.

(a) 7, 13, 19, 25, 31, …

..... [2]

(b) 9, 16, 25, 36, 49, …

..... [2]

1058 - (0580-W 2017-Paper 2 (Extended)/2-Q16) - *SEQUENCES*

Here are the first four terms of a sequence.

23 17 11 5

(a) Find the next term.

..... [1]

(b) Find the nth term.

..... [2]

1059 - (0580-S 2018-Paper 2 (Extended)/3-Q22) - *SEQUENCES*

Find an expression for the nth term of each sequence.

(a) 11, 7, 3, –1, …

..... [2]

(b) 3, 6, 12, 24, …

..... [2]

1060 - (0580-W 2018-Paper 2 (Extended)/2-Q13) - *SEQUENCES*

These are the first five terms of a sequence.

-4 2 8 14 20

Find an expression for the nth term of this sequence.

..... [2]

1061 - (0580-S 2018-Paper 2 (Extended)/2-Q3) - *SEQUENCES*

Here is a sequence.

a, 13, 9, 3, –5, –15, b, …

Find the value of a and the value of b.

$a =$ .....

$b =$ ..... [2]

1062 - (0580-S 2019-Paper 2 (Extended)/1-Q22) - *SEQUENCES*

(a) These are the first four terms of a sequence.

5 8 11 14

(i) Write down the next term.

..... [1]

(ii) Find an expression, in terms of n, for the nth term.

..... [2]

(b) These are the first five terms of another sequence.

$\frac{1}{2}$ $\frac{3}{4}$ $\frac{7}{6}$ $\frac{13}{8}$ $\frac{21}{10}$

Find the next term.

..... [1]

1063 - (0580-W 2018-Paper 2 (Extended)/1-Q11) - *SEQUENCES*

These are the first five terms in a sequence.

8 11 14 17 20

(a) Find the next term.

..... [1]

(b) Find an expression for the nth term.

..... [2]

1064 - (0580-W 2019-Paper 2 (Extended)/3-Q14) - *SEQUENCES*

Find the nth term of each sequence.

(a) $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \frac{1}{10}, \ldots$

..... [1]

(b) 1, 5, 25, 125, 625, ...

..... [2]