

# Delta 1

## Unit 10 Review (Non-Calculator)

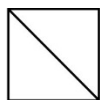
### Sequences and Graphs

How well did you do:

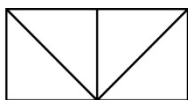
|                      |                            |  |
|----------------------|----------------------------|--|
| Sequences and Graphs | Score = $\frac{\quad}{37}$ |  |
|----------------------|----------------------------|--|

| <b><i>Topics/skills which need to be revisited:</i></b>                                                                                                                                                                                                                                                           | <b><i>Question from the review</i></b>                                                                         | <b><i>Further Practice from Delta 1</i></b>                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>Find nth term of a sequence of numbers</li><li>Justify whether a particular number is in the sequence</li><li>Write first few terms when given linear nth term formula</li><li>Write first few terms when given quadratic nth term formula</li></ul>                        | <ul style="list-style-type: none"><li>2ab, 8</li><li>2c</li><li>4a</li><li>4b</li></ul>                        | <ul style="list-style-type: none"><li>P250 Q10</li><li>P239 Q14a, 17</li><li>P250 Q12, 13</li><li>P241 Q9</li></ul>                            |
| <ul style="list-style-type: none"><li>Find nth term from a pattern</li><li>Find next few numbers in a geometric sequence</li><li>Write term-to-term rule of a geometric sequence</li><li>Understanding nth term formula for a geometric sequence</li></ul>                                                        | <ul style="list-style-type: none"><li>1</li><li>12a</li><li>12b</li><li>12c</li></ul>                          | <ul style="list-style-type: none"><li>P256 Q9</li><li>P251 Q17b</li><li>P251 Q17a, 18i</li><li>n/a</li></ul>                                   |
| <ul style="list-style-type: none"><li>Find coordinates for a missing vertex</li><li>Find coordinates of the midpoint</li></ul>                                                                                                                                                                                    | <ul style="list-style-type: none"><li>3a</li><li>3b, 5ab</li></ul>                                             | <ul style="list-style-type: none"><li>P255 Q4</li><li>P254 Q9, 10</li></ul>                                                                    |
| <ul style="list-style-type: none"><li>Complete table of values when given linear relationship</li><li>Draw a linear graph (from a table of values)</li><li>Find where two graphs intersect</li><li>Write equation of horizontal or vertical lines</li><li>Write equation of the main 45° diagonal lines</li></ul> | <ul style="list-style-type: none"><li>6a, 7a, 9b</li><li>6b, 7b, 9b</li><li>7c</li><li>9a</li><li>9a</li></ul> | <ul style="list-style-type: none"><li>P252 Q4a, 5a</li><li>P252 Q4bc, 5bc</li><li>P260 Q12b</li><li>P251 Q1, P252 Q2</li><li>P253 Q8</li></ul> |

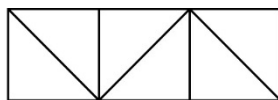
- 1 Here is a sequence of patterns made from sticks.



Pattern 1



Pattern 2



Pattern 3

Pattern 4

- a Draw pattern number 4 in the space provided.

- b Complete the table.

| Pattern number         | 1 | 2 | 3 | 4 | 5 |
|------------------------|---|---|---|---|---|
| Total number of sticks | 5 | 9 |   |   |   |

- c Write down the number of sticks in pattern number 50

.....

- d Write an expression, in terms of  $n$  for the number of sticks in pattern number  $n$

.....

(5 marks)

- 2 The first four terms of an arithmetic sequence are

5   8   11   14

- a Write down the common difference.

.....

- b Write an expression for the  $n$ th term of this sequence.

.....

- c Is the number 105 a term of this sequence?

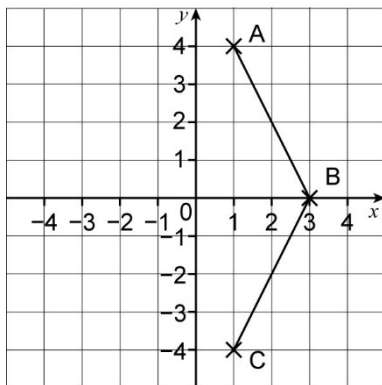
You must give a reason for your answer.

.....

.....

(4 marks)

- 3 ABCD is a rhombus drawn on a cm grid.



$A = (1, 4)$ ,  $B = (3, 0)$  and  $C = (1, -4)$

- a Find the coordinates of the point D.

.....

The midpoints of the sides of ABCD are K, L, M and N.

- b Find the coordinates of each of these points.

.....

(4 marks)

4 Find the first three terms given the  $n^{\text{th}}$  term

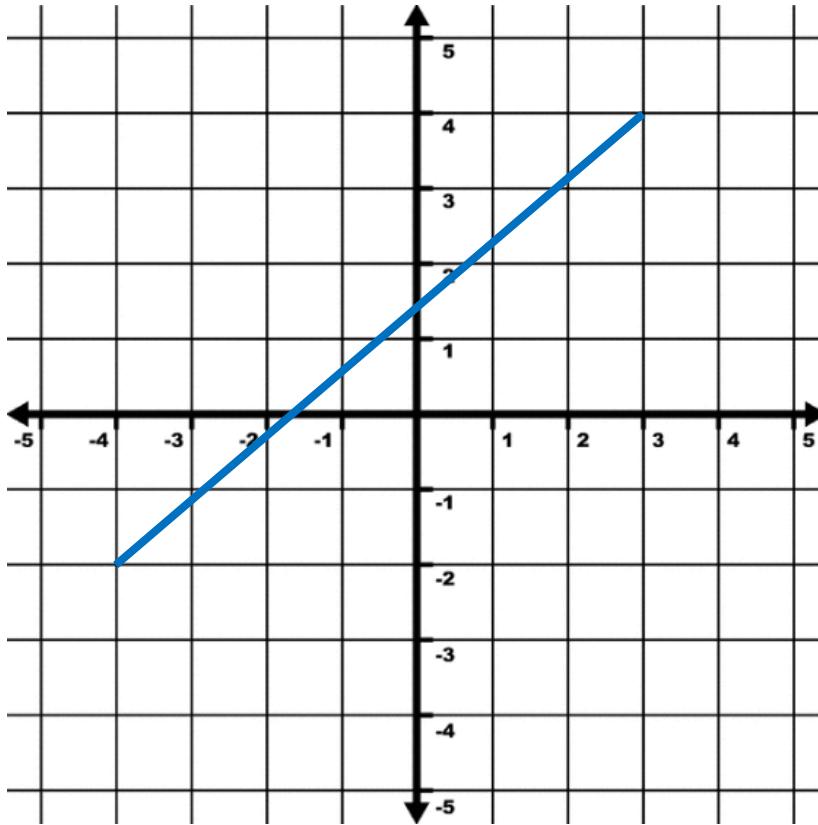
**a**  $n^{\text{th}} \text{ term} = 6n - 7$

**b**  $n^{\text{th}} \text{ term} = n^2 - 2n$

(3 marks)

5) Find the mid-point of

a. the line segment



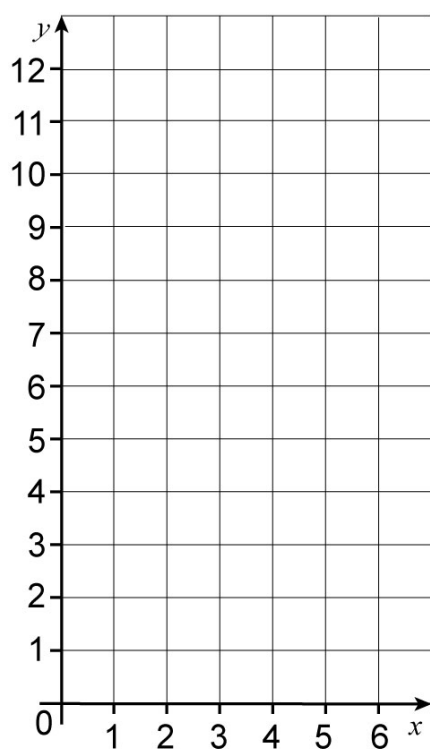
b the co-ordinates  $(0,4)$  and  $(3,1)$

(4 marks)

- 6 a** Complete the table for the graph of  $y = x + 2$

|     |   |   |   |   |   |
|-----|---|---|---|---|---|
| $x$ | 1 | 2 | 3 | 4 | 5 |
| $y$ | 3 | 4 |   |   |   |

- b** On the grid, draw the graph of  $y = x + 2$



The point P lies on the graph  $y = x + 2$  and on the graph of  $y = 7$

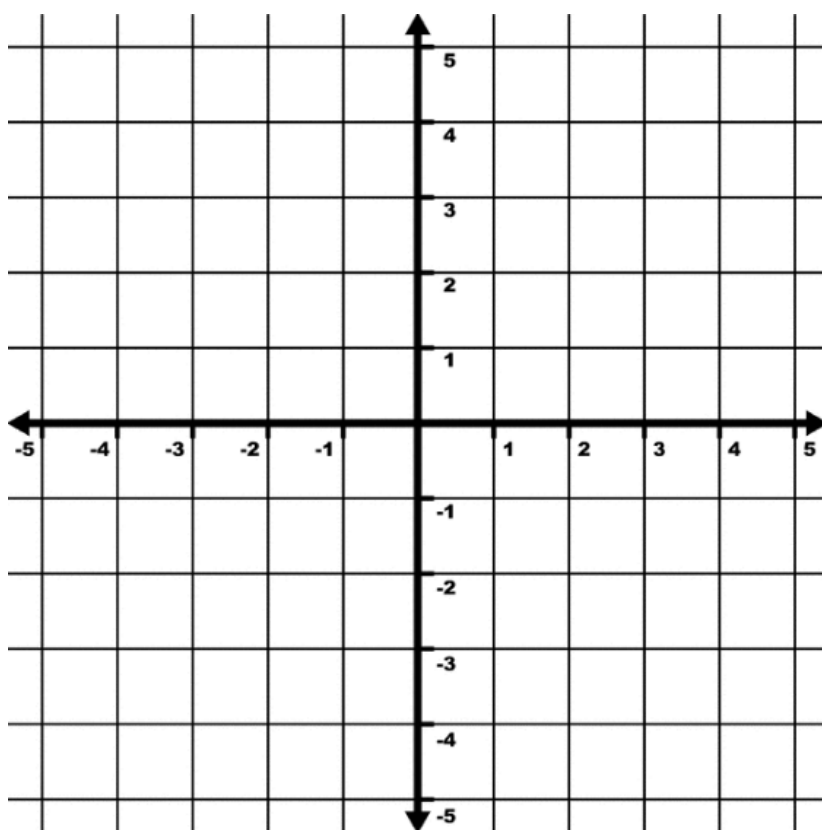
- c** Find the coordinates of the point P.

.....  
(4 marks)

7 a Complete the table for the graph of  $y = 2x - 3$

|     |   |   |   |
|-----|---|---|---|
| $x$ | 0 | 1 | 2 |
| $y$ |   |   |   |

b On the grid, draw the graph of  $y = 2x - 3$



.....

(3 marks)

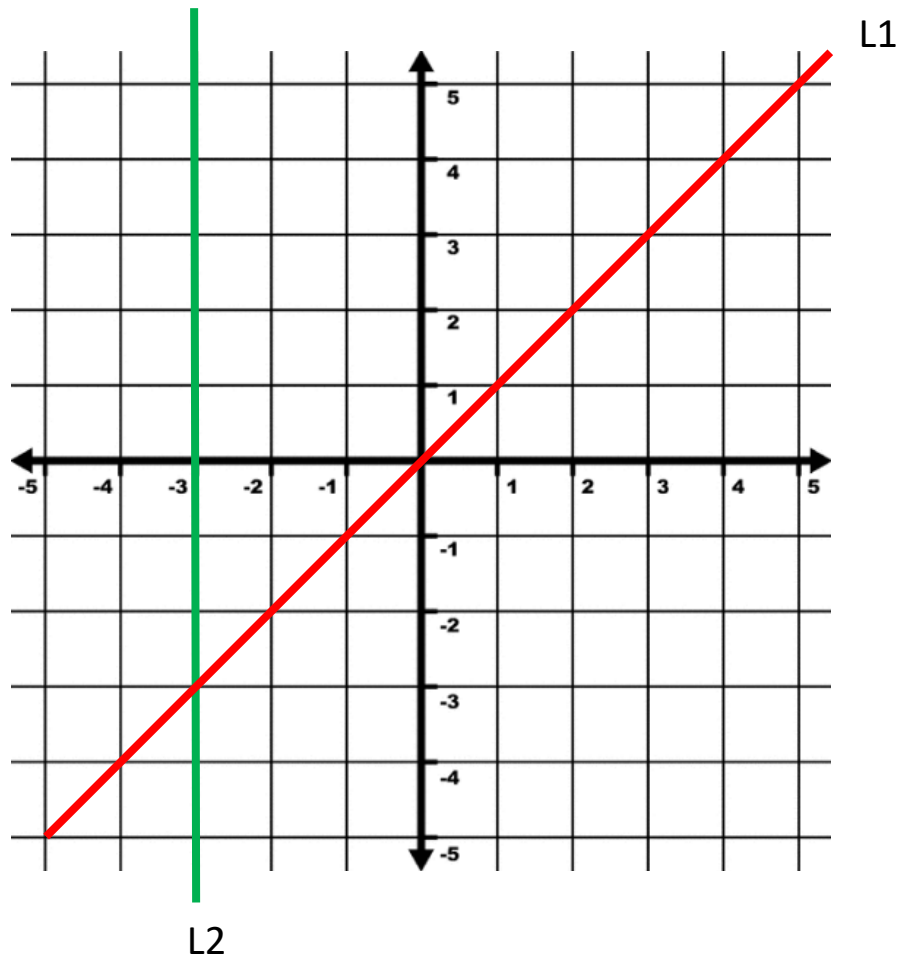
8 Find the  $n^{\text{th}}$  term of the following sequence

2, 8, 14, 20, 26, .....

.....  
(2 marks)

9 Write the equation of the following lines, L1 and L2

a



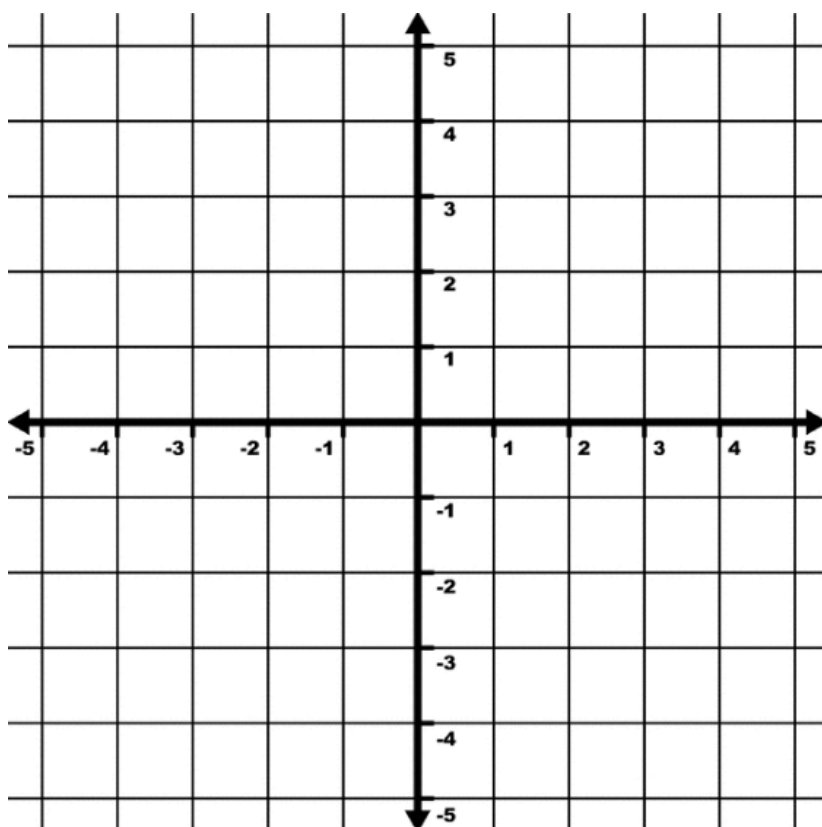
Equation of L1: .....

Equation of L2: .....

**b** Complete the table for the graph of  $y = -x$

|     |   |   |   |
|-----|---|---|---|
| $x$ | 0 | 1 | 2 |
| $y$ |   |   |   |

On the grid, draw the graph of  $y = -x$



.....  
(4 marks)

**10** Here are the first 4 terms of a geometric sequence.

2   6   18   54

**a** Write the next two terms in the sequence.

.....

**b** Write, in words, the term-to-term rule for this sequence.

.....

The  $n$ th term of this sequence can be written as  $2 \times 3^k$

**c** Write the relationship between  $k$  and  $n$

..... **(4 marks)**

[END of REVIEW]