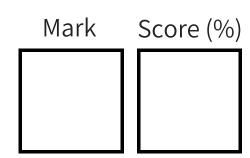Name:

Date:

GEOMETRIC SEQUENCES

GCSE
Edexcel
Mathematics
Grade 8/9

Mark

Score (%)

Materials

For this paper you must have:

- Ruler
- Pencil, Rubber, Protractor and Compass
- Scientific calculator, which you are expected to use when appropriate

Instructions

- Answer all questions
- Answer questions in the space provided
- All working must be shown
- Do all rough work in this book. Cross out any rough work you don't want to be marked

Information

- The marks for the questions are shown in brackets

1 Which sequences below are geometric?

A   1 , 2 , 4 , 8 , 1 6
B   2 , 4 , 6 , 8 , 1 0
C   20, 17, 14, 11, 8
D   3 , 9 , 27, 81, 243
E   80, 20, 5 , 1.25

....

(Total for question 1 is 5 marks)

2

3   12   48   192

(a)   Find the common ratio for this sequence

....

(1)

(b)   What is the next term?

....

(1)

(Total for question 2 is 2 marks)

3   What are the missing terms in this geometric sequence?

4   _   16   32   _

.... and ....

(Total for question 3 is 2 marks)

4   What is the common ratio for the following sequence, hence find the next two terms.

$$-1 \qquad -4 \qquad -16 \qquad -64 \qquad \_ \qquad \_$$

Ratio: ....

Next two terms: .... , ...

(Total for question 4 is 2 marks)

5   Fill in the gaps in the following geometric sequence

$$1 \qquad \_ \qquad \_ \qquad 8$$

....

(Total for question 5 is 2 marks)

6 Here is some nth term formulae, which of them refers to a geometric sequence.
Circle the correct sequences.

$$\textbf{A} \;\; 3n^2 \qquad \textbf{B} \;\; 3n+1 \qquad \textbf{C} \;\; 4^n \qquad \textbf{D} \;\; 2n^2+3n+5$$

....

(Total for question 6 is 2 marks)

7 Find the value of x in this geometric sequence?

$$4, \qquad x, \qquad 36$$

$$\textbf{A} \;\; 3n^2 \qquad \textbf{B} \;\; 3n+1 \qquad \textbf{C} \;\; 4^n \qquad \textbf{D} \;\; 2n^2+3n+5$$

....

(Total for question 7 is 2 marks)

8 (a) What is the common ratio in this sequence?

$$16x, \quad 8x, \quad 4x$$

....

(1)

(b) Given that the sum of these terms is 84. Find the next term?

....

(1)

(Total for question 8 is 2 marks)

$$16x, \quad 8x, \quad 4x$$

9 Here is a geometric sequence..

$$2x - 5, \ x - 1, \ x + 1$$

Find the integer value of x and hence the next term of this geometric sequence

....

(Total for question 9 is 4 marks)

$$2x - 5, \ x - 1, \ x + 1$$

10   Here are the first three terms of a geometric sequence. Find the integer value of x.

$$4, \quad x, \quad 2x + 12$$

....

(Total for question 12 is 4 marks)