

GCSE Maths: Geometric sequences (Foundation): worksheet

GCSE Maths - Sequences and nth Term - Foundation - Lesson 11.7

Name: _____

Date: _____

Score: _____

12 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch11-sequences/foundation/geometric-sequences/

Exercise 11G Geometric sequences Non-calculator

1 Write down the next two terms of each sequence.

(a) 1, 2, 4, 8, ...

Answer: _____

(b) 3, 9, 27, ...

Answer: _____

(c) 5, 10, 20, 40, ...

Answer: _____

(d) 256, 128, 64, 32, ...

Answer: _____

2 Write down the next two terms of each sequence.

(a) 2, 6, 18, 54, ...

Answer: _____

(b) 1000, 100, 10, 1, ...

Answer: _____

(c) 4, 12, 36, 108, ...

Answer: _____

(d) 6, 3, 1.5, ...

Answer: _____

(e) 8, 12, 18, 27, ...

Answer: _____

(f) 2, 10, 50, ...

Answer: _____

3 Write down the common ratio of each geometric sequence.

(a) 3, 6, 12, 24, ...

Answer: _____

(b) 2, 10, 50, ...

Answer: _____

(c) 162, 54, 18, 6, ...

Answer: _____

(d) 4, 6, 9, ...

Answer:

(e) 1, 4, 16, 64, ...

Answer:

(f) 64, 16, 4, 1, ...

Answer:

4 Say whether each sequence is arithmetic or geometric, and describe the rule.

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

Answer:

(b) 4, 8, 16, 32, ...

Answer:

(c) 90, 30, 10, ...

Answer:

(d) 90, 60, 30, 0, ...

Answer:

(e) 7, 21, 63, ...

Answer:

(f) 7, 14, 21, 28, ...

Answer:

5 Write down the first four terms of the sequence with each n th term.

(a) 2^n

Answer:

(b) 5^n

Answer:

(c) 10^n

Answer:

(d) $(\frac{1}{2})^n$

Answer:

6 Work out the term asked for.

(a) n th term 2^n : the 8th term

Answer:

(b) n th term 3^n : the 6th term

Answer:

(c) n th term 10^n : the 5th term

Answer:

(d) n th term $(\frac{1}{2})^n$: the 4th term

Answer:

- 7** A scientist starts with 50 bacteria. The number doubles every hour. Term 1 is the start, term 2 is after 1 hour, and so on. How many bacteria are there after 6 hours?

Answer:

- 8** A ball is dropped from a height of 160 cm. Each time it bounces back up to half its previous height. How high does it bounce on the 4th bounce?

Answer:

- 9** A phone is worth £500 when new. After 1 year it is worth £400, after 2 years £320. Each year its value is multiplied by the same number. What is its value after 4 years?

Answer:

- 10** Liam says, "The sequence 1, 2, 4, 7, 11 is geometric because it goes up so fast." Is he right? Explain.

Answer:

- 11** Show that the sequence 3, 12, 48, 192, ... is geometric and find the 7th term.

Answer:

- 12** The n th term of one sequence is $2n$ and the n th term of another sequence is 2^n . Compare the 10th terms of the two sequences. What does this show about geometric sequences?

Answer:
