

GCSE Maths: Position-to-term rules (Foundation): worksheet

GCSE Maths - Sequences and nth Term - Foundation - Lesson 11.3

Name: _____

Date: _____

Score: _____

13 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch11-sequences/foundation/position-to-term-rules/

Exercise 11C Position-to-term rules Non-calculator

1 Write down the first four terms of the sequence with each nth term.

(a) $2n$

Answer:

(b) $n + 5$

Answer:

(c) $3n$

Answer:

(d) $n - 1$

Answer:

2 Write down the first four terms of the sequence with each nth term.

(a) $3n + 1$

Answer:

(b) $5n - 2$

Answer:

(c) $4n + 3$

Answer:

(d) $2n - 7$

Answer:

(e) $10n + 5$

Answer:

(f) $6n - 1$

Answer:

3 Write down the first five terms of the sequence with each nth term.

(a) $20 - 3n$

Answer:

(b) $12 - 2n$

Answer:

(c) $50 - 10n$

Answer:

(d) $1 - n$

Answer:

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

(a) $n^2 + 1$

Answer:

(b) $n^2 - 1$

Answer:

(c) $2n^2$

Answer:

(d) $3n^2 + 2$

Answer:

(e) n^3

Answer:

(f) 3^n

Answer:

5 Work out the term asked for.

(a) The n th term is $4n + 7$. Find the 100th term.

Answer:

(b) The n th term is $3n - 5$. Find the 50th term.

Answer:

(c) The n th term is $9n + 4$. Find the 20th term.

Answer:

(d) The n th term is $100 - n$. Find the 60th term.

Answer:

(e) The n th term is $n^2 + 3$. Find the 12th term.

Answer:

(f) The n th term is $2n^2 + 1$. Find the 10th term.

Answer:

6 The n th term of a sequence is $3n - 2$. Work out the terms in positions 1, 2, 5 and 10.

Answer:

7 A taxi charges a fixed £3 plus £2 for every mile. The cost, in pounds, of a journey of n miles is $2n + 3$.

(a) Work out the cost of a 7-mile journey.

Answer:

(b) Work out the cost of a 15-mile journey.

Answer:

(c) Work out the cost of a 40-mile journey.

Answer:

- 8 A gym charges £25 to join and then £15 a month. After n months the total cost in pounds is $15n + 25$. Work out the total cost after 12 months.

Answer:

- 9 Zoe says, "The 5th term of the sequence $2n^2$ is 100, because $2 \times 5 = 10$ and $10^2 = 100$." What mistake has she made, and what is the correct answer?

Answer:

- 10 Which of these is the n th term of the sequence 5, 8, 11, 14, ...? **A** $5n$ **B** $n + 4$ **C** $3n + 2$ **D** $3n + 5$. Show how you decide.

Answer:

- 11 The n th term of one sequence is n^2 and the n th term of another is $11n$.

(a) Which is bigger, the 10th term of n^2 or the 10th term of $11n$?

Answer:

(b) Which is bigger, the 12th term of each?

Answer:

- 12 A function machine does the following to the position number n : multiply by 4, then subtract 3, giving the term.



(a) Write the n th term.

Answer:

(b) Work out the 6th term.

Answer:

- 13 The n th term of a sequence is $7n - 4$. Work out the **sum** of the 1st term and the 10th term.

Answer: