



Scan for the solutions

Name: _____ **Date:** _____ **Score:** _____ / 35

1 Here is the sequence of odd numbers.

1 3 5 7 9 ...

- Write down the two odd numbers that come after 23.
- Write down the 10th even number.
- Kai says, "The 20th odd number is 40." Explain why Kai is wrong.

(3 marks)

Answer _____

2 $T = 4x + 3y$

Work out the value of T when $x = 5$ and $y = 2$.

(2 marks)

Answer _____

3 Fill in the missing numbers in each sequence.

a. 4, 9, __, 19, __

b. 50, __, 36, 29, __

c. 3, 6, 12, __, 48

(3 marks)

Answer _____

4 The n th term of a sequence is $6n - 1$

Write down the first three terms of the sequence.

(2 marks)

Answer _____

- 5 The n th term of a sequence is $20 - 4n$
- Write down the first four terms of the sequence.
 - Work out the 10th term of the sequence.

(2 marks)

Answer _____

- 6
- Work out the value of $3x^2 + 4$ when $x = -2$
 - Work out the value of $2x^3$ when $x = 3$
 - Work out the value of $2x^3$ when $x = -1$

(3 marks)

Answer _____

- 7 Here are the first four terms of an arithmetic sequence.

5 9 13 17

Find an expression, in terms of n , for the n th term of the sequence.

(2 marks)

Answer _____

- 8 $F = 5v + 20$
- Work out the value of F when $v = 6$.
 - Work out the value of v when $F = 95$.

(4 marks)

Answer _____

9

The n th term of a sequence is $5n - 3$

- Work out the 12th term of the sequence.
- Is 122 a term of the sequence? You must show how you get your answer.

(3 marks)

Answer _____

10

Here are the first three patterns in a sequence made from matchsticks.

- How many matchsticks are needed for Pattern 4?
- Find an expression, in terms of n , for the number of matchsticks in Pattern n .
- Which pattern uses 31 matchsticks?



Pattern 1



Pattern 2



Pattern 3

(4 marks)

Answer _____

11

The perimeter, P , of a rectangle is given by the formula

$$P = 2(l + w)$$

A rectangular football pitch for Year 7 has a perimeter of 34 m and a length of 11 m.

Work out the width of the pitch.

(3 marks)

Answer _____

12 Here are the first four terms of an arithmetic sequence.

8 15 22 29

- Find an expression, in terms of n , for the n th term of the sequence.
- Explain why 150 is not a term of the sequence.

(4 marks)

Answer

End of questions | Total 35 marks