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2. The table shows the first three terms of a sequence.

Term number	1	2	3		
Term	2	5	10		

The rule for this sequence is

$$\text{Term} = (\text{Term number})^2 + 1$$

(a) Work out the next two terms of this sequence.

.....,
(2)

(b) One term of this sequence is 101.
Find the term number of this term.

.....
(2)

Q2

(Total 4 marks)

4. Here is a pattern of shapes made from centimetre squares.

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Shape number 1



Shape number 2



Shape number 3

This rule can be used to find the perimeter of a shape in this pattern.

Add 1 to the Shape number and then multiply your answer by 2

P cm is the perimeter of Shape number n .

(a) Write down a formula for P in terms of n .

.....
(3)

(b) Make n the subject of the formula in part (a).

$n =$
(3)

Q4

(Total 6 marks)

8. Here are some patterns made from sticks.

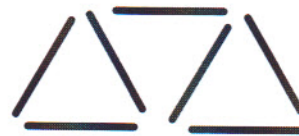
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Pattern number 1



Pattern number 2



Pattern number 3

This rule can be used to find the number of sticks in one of these patterns.

Multiply the pattern number by 2 and then add 1

- (a) n is the number of sticks in Pattern number p .
Write down a formula for n in terms of p .

.....
(3)

- (b) Make p the subject of your formula.

$p =$
(2)

(Total 5 marks)

Q8



8. The n th term of a sequence is given by this formula.

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$$n\text{th term} = 20 - 3n$$

(a) Work out the 8th term of the sequence.

.....
(1)

(b) Find the value of n for which $20 - 3n = -22$

$n =$
(2)

Here are the first five terms of a different sequence.

8 11 14 17 20

(c) Find an expression, in terms of n , for the n th term of this sequence.

n th term =
(2)

(Total 5 marks)

Q8