Write these terms for each sequence.

I. $3n + 7$
a. $(3 \times 4) + 7 = 19$

1	$3n + 7$
	4th, 15th, 21st

2	$4n - 1$
	3rd, 11th, 18th

3	$10n - 3$
	6th, 10th, 50th

4	$6n + 4$
	4th, 8th, 15th

5	$n^2 + 4$
	4th, 6th, 10th

6	$\frac{n}{2} + 5$
	4th, 18th, 23rd

Describe the rules in words to show the relationship between the numbers and the terms for each sequence. Write the nth term for each.
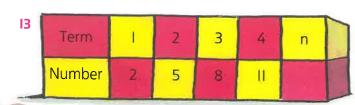
7

Term	1	2	3	4	n
Number	2	4	6	8	

8

Term	1	2	3	4	n
Number	10	20	30	40	

9

Term	1	2	3	4	n
Number	3	5	7	9	

10

Term	1	2	3	4	n
Number	4	7	10	13	

11

Term	1	2	3	4	n
Number	13	23	33	43	

12

Term	1	2	3	4	n
Number	4	8	12	16	

13

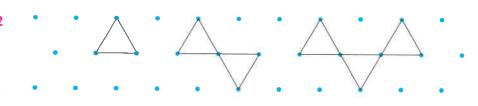| Term	1	2	3	4	n
Number	2	5	8	11	

14

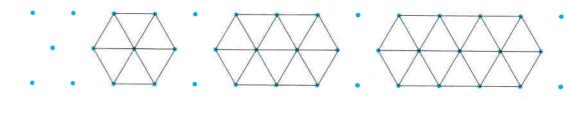| Term	1	2	3	4	n
Number	3	8	13	18	

For each set of shapes, write a sequence for the number of lines, then the number of spots.

Write the number of lines and spots in the nth shape.

Ia. $2n + 1$
Ib. $n + 2$

1

2

3

4

5

Explore

Look at this sequence of totals.

$1 + 2 = 3$
$1 + 2 + 3 = 6$
$1 + 2 + 3 + 4 = 10$

Show that the nth term (total) will be $\frac{n}{2}(n + 1)$.

Find the total of the first ten counting numbers, i.e. $1 + 2 + \ldots + 10$. Use the rule to check.

Find the total of the numbers on a 1 to 100 grid.