**Baseline Task**

The purpose of this task is to assess your knowledge of number patterns from the previous grades. **Write the following at the back of your 2 quire homework book.**

1. For each of the following sequences determine:
2. The next term b. the $n^{th}$ term c. the $40^{th}$ term

 1.1 4; 8 ; 12 ; …. 1.2 1; 3 ; 9 ; …. 1.3 2 ; 6 ; 18 ; …….

 1.4 1 ; $\frac{1}{9}$ ; $\frac{1}{81}$ ; ….. 1.5 1 ; 3 ; 6 ; 10 ; ……

1. Consider the pattern of rectangles below:

The above pattern of rectangles is repeated indefinitely, each time one more rectangle is added

 to the previous block of rectangles. The first rectangle comprises four line segments, the second

two rectangles and seven line segments, etc.

* 1. How many line segments are required to produce $n$ rectangles?
	2. Hence calculate how many line segments are required to produce 100 rectangles?
1. In each of the following sequences you are given the $n^{th }$term. Write down the first three terms.

3.1 $8n-7$ 3.2 $n^{3}+4$

3.3 $\frac{(-1)^{n}n}{3}$ 3.4 $(1+\frac{1}{n})^{n}$

MEMO – Lesson 1