Name_____

(1) Write the next two numbers in the sequence and write a 'term to term' rule such as "add 3" or "multiply by 3"

1, 3, 5, 7_____

-2,-5,-8,-11_____

10, 20, 15, 25, 20, 30_____

1, 2, 4, 7, 11, 16_____

64, 32, 16, 8_____

1, 4, 9, 16, 25_____

1, 5, 25, 125,_____

81, 27, 9, 3_____

☻☻☺, ☻☻☻☺☺, ☻☻☻☻☺☺☺, _____

10000, 1000, 100,_____

▲▲▲▲▲▲▲▲, ▲▲▲▲, ▲▲,_____

(2) Write the nth term sequence for the following:

1, 5, 9, 13_____

4, 7, 10, 13_____

8, 6, 4, 2_____

1, 11, 21, 31_____

3, 1, -1, -3 _____

5, 10 , 15, 20_____

(3) Using the 'nth term' sequences in question 2, find:

(i) The 7 term
(ii) The 100^{th} term

(4) Using the 'nth term' sequences in question 2, state whether the following numbers are in each:

(i) 21
(ii) 81
(iii) 61
(iv) 100

(5) Starting with the number 1, write out the first 4 terms of each sequence below:

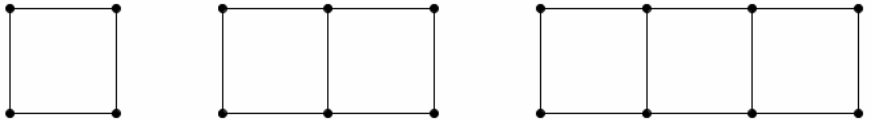
Add 9_____

Multiply by 3_____

Divide by 2 _____

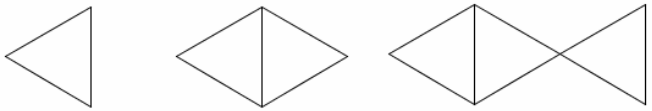
Add one more each time_____

(6) The dots and sticks below make a number pattern



(i) draw the next 2 in pattern
(ii) state the 'term to term' rule for dots **and** sticks?
(iii) how many dots **and** how many sticks will be in the 10^{th} pattern
(iv) how many squares can you make with 36 sticks?

(7) The pattern below shows the first 3 shapes in a sequence



(i) Draw the next two shapes in the sequence
(ii) State which patterns in the sequence are symmetrical
(iii) Find a rule for the pattern

Extension

Make 1 number and 1 shape patter up with a clear rule for you partner (or teacher) to solve. Give them hints if they are struggling