Name_____

DO ANY WORKINGS ON THE REAR OF THE SHEET

(A) These are just general sequences or number patterns. Find the next 2 terms in the sequence and state a basic rule such as 'subtract 3 each time' or 'multiply by 2

1. 1,2,4,7,11_____
2. 3,9,27_____
3. 10,5,0,-5_____
4. 2,4,8,16_____
5. 10,9,7,4,0,-5_____
6. 1,8,27,64_____

(B) These are 'n term' sequence problem. Write the **nth term sequence** rule for each (This is NOT 'add 1 each time' or 'subtract 2 each time')

1. 4,7,10,13,16_____
2. 5,9,13,17_____
3. 1,3,5,7_____
4. 8,18,28,38_____
5. 5,3,1,-1_____

Based on the questions above, find the 20^{th} term in each sequence

1. _____
2. _____
3. _____
4. _____
5. _____

(C) A particular nth term sequence is given as 4n – 1

Showing all workings find:

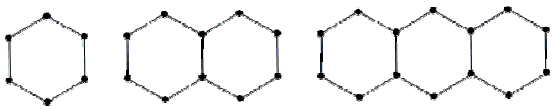
1. the first 4 terms in the sequence _____
2. the 25^{th} term_____

Which of these numbers is in the pattern? (You MUST show how you decided)

1. 39 Yes □ No □ Reason_____
2. 103 Yes □ No □ Reason_____
3. 3999 Yes □ No □ Reason_____

(D) Study the pattern below

1. How many sticks would be in the next pattern?_____
2. How many dots would be in the next pattern? _____
3. Is there a rule for the pattern? _____



(E) Write 3 number sequences below for the teacher to solve (writing your rule on the back) They must be solvable!

1. _____
2. _____
3. _____