10.06.20

LI: I am learning to identify rules in number sequences.

1) The numbers in this sequence increase by 10 each time.

        3   13   23 ...

   The sequence continues in the same way.

   a) Write two numbers from the sequence that add to make a total of 96

   b) Explain why it is not possible to find three numbers from the sequence that add to make a total of 96

2) A sequence starts at **500** and **80** is **subtracted** each time.
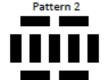
        500 420 340 ...

   The sequence continues in the same way. Write the **first two numbers** in the sequence which are **less than zero**.
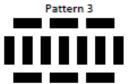
3) This sequence of numbers **goes up by** 40 each time.

        40 80 120 160 200 ...

   This sequence continues. Will the number **2140** be in the sequence? Explain how you know.

4)

Here is a made from bricks

Pattern 1   Pattern 2   Pattern 3

   a) Draw pattern 4.
   b) How many bricks will there be in pattern number 8?
   c) Which pattern will have 49 bricks?
   d) How many bricks ill there be in pattern n?

5) The formula $3n-1$ can be used to work out other numbers in the sequence.
2   5   8   11
Find the 7th and 10th term in the sequence using this formula.

pattern number **1**   pattern number **2**

pattern number **3**

To find the number of hexagons in pattern number **n** you can use these rules:

Number of **grey** hexagons = $n + 1$

Number of **white** hexagons = $2n$

Altogether, what is the total number of hexagons in **pattern number 20**?