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| **E** | Here are some patterns made up of dots.    (a) Draw Pattern number 4.  (b) Complete the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Pattern number | 1 | 2 | 3 | 4 | 5 | | Number of dots | 10 | 14 | 18 |  |  |   (c) How many dots are used in Pattern number 10? | Adam makes some patterns using sticks.    (a) Draw Pattern Number 4.  (b) Complete the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Pattern Number | 1 | 2 | 3 | 4 | 5 | | Number of sticks | 5 | 9 | 13 |  |  |   (c) How many dots are used in Pattern number 10? |
| **E** | Here are some patterns made from sticks.      (a) Complete Pattern number 4.  (b) Complete the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Pattern number | 1 | 2 | 3 | 4 | 5 | | Number of sticks | 6 | 10 | 14 |  |  |   (c) How many dots are used in Pattern number 8? | Here are some patterns made with dots.    (a) Complete Pattern Number 4.  The table shows the number of dots used to make each pattern.  (b) Complete the table   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Pattern Number | 1 | 2 | 3 | 4 | 5 | | Number of dots | 5 | 8 | 11 |  |  |   (c) How many dots are used in Pattern number 12? |

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| **E** | Here are the first five terms of a number sequence.  1 5 10 16 23  Write down the next **two** terms of the sequence. | Here are the first 5 terms of a number pattern.  3 7 11 15 19  (a) Write down the next term in the number pattern.  (b) Work out the 8th term in the number pattern. | Here are the first four terms of a simple sequence.  5 12 19 26  Write down the next term in the sequence. |
| **D** | Here are the first four terms of a number sequence.  2 7 12 17  (a) Write down the **6th** term of this  number sequence.  The *n*th term of a different number sequence is 4*n* + 5  (b) Work out the first three terms  of this number sequence. | Here are the first five terms of a number sequence.  3 8 13 18 23  (a) Write down the next **two** terms of the sequence.  (b) Explain how you found your answer.  (c) Explain why 387 is **not** a term of the sequence. | Here are the first five terms of a number sequence.  10 16 22 28 34  Write down the next term of the number sequence.  Explain why 861 is **not** a term of the number sequence. |
| **C** | Here are the first five terms of an arithmetic sequence.  3 5 7 9 11  Find, in terms of *n*, an expression for the *n*th term of the sequence. | Here are the first five terms of an arithmetic sequence.  4 7 10 13 16  Find, in terms of *n*, an expression for the *n*th term of the sequence. | The first four terms of an arithmetic sequence are  21 17 13 9  Find, in terms of *n*, an expression for the *n*th term of this sequence. |
| **C** | Here are the first five terms of an arithmetic sequence.  3 7 11 15 19  Find, in terms of *n,* an expression for the *n*th term of the sequence.  Laura says that 412 is a term in this arithmetic sequence. Laura is wrong.  Explain why. | The first five terms of an arithmetic sequence are  4 11 18 25 32  Find, in terms of *n*, an expression for the *n*thterm of the sequence.  Jane says that 697 is a term in the arithmetic sequence,  Is Jane correct?  You must justify your answer. | Here are the first five terms of an arithmetic sequence.  7 11 15 19 23  Write down, in terms of *n*, an expression for the *n*th term of this sequence.  Pat says that 453 is a term in this sequence. Pat is wrong.  Explain why. |