|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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? |

|  |  |  |  |
| --- | --- | --- | --- |
| **E** | Here are the first five terms of a number sequence. 1 5 10 16 23Write 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 26Write 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 34Write 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 16Find, 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 19Find, 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 are4 11 18 25 32Find, 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 23Write 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. |