 NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DATE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PERIOD \_\_\_\_\_\_\_

**Patterns & Sequences**

Write the next 5 terms of each of the following sequences then make them into a table:

1) 1, 4, 7, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Value | 1 | 4 | 7 | 10 |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) 1, 3, 6, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) 2, 5, 9, 14, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In sequences 4 through7, fill in the terms and the values:

4) 2, 5, 10, 17, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) 10,000, 1,000, 100, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) 1, 4, 9, 16, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7) 1, 8, 27, 64, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

What is the pattern? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the next five terms of the famous

 Fibonacci Sequence:

|  |  |
| --- | --- |
| TERM  *X* | VALUE  *Y* |
| 1 | 1 |
| 2 | 1 |
| 3 | 2 |
| 4 | 3 |
| 5 | 5 |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |

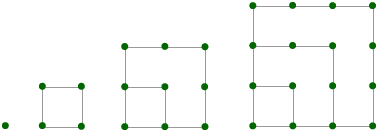
1, 1, 2, 3, 5, . . . . . . .

Describe the Fibonacci Pattern:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

THE SQUARE SEQUENCE

Extend this dot pattern:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

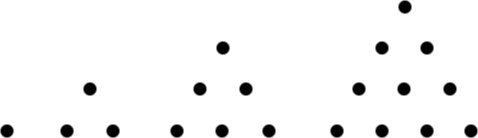
The number of dots in each square forms a sequence of numbers. Write the first 10 terms in this sequence:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

Describe the pattern \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

THE TRIANGLE SEQUENCE

Extend this dot pattern:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The number of dots in each triangle forms a sequence of numbers. Write the

first 10 terms in this sequence:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term |  |  |  |  |  |  |  |  |  |
| Value |  |  |  |  |  |  |  |  |  |

Describe the pattern \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Add pairs of numbers that are next to each other in the sequence. What do you

notice? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_