 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? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_