**Doubling Your Money**

A **geometric sequence** is a sequence in which there is a common ratio among each pair of consecutive terms.

Congratulations! You just won the $500 first prize in a poetry writing contest. If you take the $500 you won and invest it in a mutual fund earning 8% interest per year, how long will it take for your money to double?

1. Solve this problem by creating a table.

|  |  |
| --- | --- |
| **Year** | **Value of Investment** |
| 0 | $500 |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |

1. What is the recursive rule for this geometric sequence?
2. After 15 years, your $500 investment will be worth $1586.08. What will your investment be worth after 16 years?
3. Graph your table of values on the coordinate plane below. Label and scale the axes appropriately.

