Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Applied Discrete - Sequences Quiz Review

***Determine if the following sequences are arithmetic, geometric, or neither. If the sequence is arithmetic or geometric, state the common difference or common ratio respectively.***

1) $-3, -18, -108, -648…$ 2) $2, 4, 12, 48, 240 …$

3) $-35, 165, 365, 565, 765…$ 4) $-2, 6, -18, 54, -162…$

***For problems 5 through 8, find the formula for the nth term of each sequence (if applicable). Then, find the tenth term in each sequence.***

5) $-2.5, -5, -10, -20, -40…$ 6) $-18, -12, -6, 0, 6…$

7) $3, 11, 19, 27, 35, …$ 8) $1, 2, 4, 8, 16, …$

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Applied Discrete - Sequences Quiz Review

***Complete the table below.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Representation** | **Arithmetic or Geometric?** | **Common Difference or Ratio?** | **Formula for the nth term** | **Find the given term.** |
| 1. $-6, 12, -24, …$ |  |  |  |  |
| 2. $1, 3, 9, 27,…$ |  |  |  |  |
| 3. $-10, -8, -6, …$ |  |  |  |  |
| 4.$72, 48, 24,…$ |  |  |  |  |
| 5. $-31,-23, -15,…$ |  |  |  |  |
| 6. $-4, -12, -36, …$ |  |  |  |  |
| 7. $-2, -10,-50, …$ |  |  |  |  |
| 8. $5, 11, 17, …$ |  |  |  |  |
| 9. $4, 24, 144, …$ |  |  |  |  |
| 10. $21, 16, 11,…$ |  |  |  |  |

***For each of the situations below, determine if the sequence is arithmetic or geometric. Then, answer the question.***

11. A runner begins training by running 5 miles one week. The second week she runs a total of 6.5 miles and the third week she runs 8 miles. How much does she run on the tenth week?

12. Clara’s Clothing Shop opened eight years ago. The first year she made $3,000 profit. Each year thereafter, her profits averaged 50% greater than the previous year. How much did she make after eight years?