**Unit 8.2 Arithmetic and Geometric Sequences Review:**

**Arithmetic Sequences:**

For questions 1-4

1. Give the next 3 terms.
2. Write the **CLOSED (EXPLICIT)** rule
3. Write the **RECURSIVE** rule
4. Find 

1. 10, 11, 12, 13, … 2. -1, 3, 7, 11, …

3. 1024, 512, 0, -512, … 4. 35, -15, -65, -115, …

For problems 6-10, determine whether the following are arithmetic sequences or arithmetic sequences. Then list the first 4 terms of the sequence.

1.  8. $a\_{n}=-\frac{1}{5}\left(-5\right)^{n}$
2. $a\_{1}=1$ 10. 

 $a\_{n+1}=a\_{n}∙4$11. Count the number of lines creating each figure and answer the questions below:

Fig 1 Fig 2 Fig 3

Complete the table below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Fig # | 0 | 1 | 2 | 3 | 4 | 5 |
| # of lines |  |  |  |  |  |  |

1. Write the **CLOSED (EXPLICIT)** and **RECURSIVE** rule for the number of lines needed to generate each shape.
2. How many lines would be used to create figure #20?

12. Two terms of an arithmetic sequence are  and .

 a. What is the common difference?

 b. What are the first four terms of this sequence?

 c. Write the **CLOSED (EXPLICIT)** and **RECURSIVE** rules for this sequence.

**Geometric Sequences**

1. Find the **third** term of the sequence whose first term is 10, and the **recursive** formula is .
2. Write the **Explicit (closed)** Formula, and then find the 20th term of the sequence 3, 12, 48, 192, …
3. Write both the explicit (closed) and recursive formula for the following sequence: 42, 336, 2688,…
4. Write both the explicit (closed) and recursive formula for the following sequence: 1250, 250, 50,…
5. Write the explicit (closed) and recursive formula for a geometric sequence whose 6th term is 4 and the 7th term is 2.
6. Write a rule to find the nth term of a sequence whose first term is 12 and the rate is 15.

7. Find the 17th term of the sequence 