

Name: \_\_\_\_\_

### Using Explicit Formula of Sequences

Determine whether the following sequences are geometric, arithmetic, or neither. If arithmetic find the common difference. If geometric find the common ratio. If neither explain why.

1.) 6, 24, 96, 384 ...

2.) 4, 13, 22, 31 ...

3.) -11, -7, -3, 1 ...

4.)  $\frac{1}{3}, \frac{2}{3}, 1, \frac{4}{3}, \dots$

5.)  $\frac{3}{5}, \frac{4}{25}, \frac{5}{125}, \frac{6}{625}, \dots$

6.) 1, 3, 7, 13 ...

Write the first six terms of the sequence.

7.)  $a_n = n + 1$

8.)  $a_n = \frac{1}{5}n - 7$

Find the explicit and recursive formula for the arithmetic sequence represented in the given information.

9.) 1, 3, 5, 7...

10.) 6, 14, 22, 30 ...

11.) common difference:  $\frac{1}{4}$   
2<sup>nd</sup> term: 9

12.) Write the 1<sup>st</sup> 6 terms of the sequence:

$$a_n = -2 \cdot 5^{n-1}$$

Find the explicit and recursive formula for the geometric sequence represented by the given information.

13.) 1, -4, 16, -64...

14.)  $5, -\frac{5}{3}, \frac{5}{9}, -\frac{5}{27}, \dots$

15.) Common ratio: 3  
2<sup>nd</sup> term: 6

Find the missing terms of the arithmetic sequence.

16.) -20, \_\_\_\_\_, -10

17.) -26, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, -10

Find the missing terms on the geometric sequence.

18.) 4, \_\_\_\_\_, 100

19.) 2, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 162

Find the explicit and recursive formula for each of the following.

20.) common difference: 10  
25<sup>th</sup> term: 222

21.) common ratio: 2  
11<sup>th</sup> term: -1024

22.) common difference: 4  
 $a_{24} = 92$

23.) Arithmetic sequence where  
8<sup>th</sup> term is 8, 20<sup>th</sup> term is 44

24.) Geometric sequence where  
 $a_3 = 16$  and  $a_6 = 128$

25.) Geometric sequence where  
1<sup>st</sup> term is 4, 4<sup>th</sup> term is 108