**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Introduction to Sequences Homework

***Read section 11-1 before you begin this worksheet.*  Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Block\_\_\_\_\_**

**1-13: Identify the pattern in each sequence. Then find the next 3 numbers in the sequence.**

**1.** 3, 7, 11, 15, … **2.** 3, 6, 12, 24, … **3.** -2, -7, -12, …

**4.** 3, 1, … **5.** 3, 9, 27, 81, … **6.** 

**7.** 3, 3.75, 4.5, 5.25, … **8.**  **9.** 3, -15, 75, -375, …

**10.** 3, 12, 36, 144, … **11.** 3, 18, 54, 108, … **12.** 3, -6, -17, -26, …

**13.** 1, 1, 2, 3, 5, 8, …

**14-17: Answer the following questions.**

**14.** What is an arithmetic sequence?

**15.** What is a geometric sequence?

**16.** Which of the above sequences in problems 1-13 are arithmetic?

**17.** Which of the above sequences in problems 1-13 are geometric?

**18-19: Identify each sequence below as arithmetic or geometric then, graph each sequence.**

*Hint: Graph each sequence by using the numbers in the sequence as each y-coordinate. What would the x-coordinates be?*

**18.** -4, -1, 2, 5, 8, … **19.** ,,3, 6, 12, …

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**20-21: Answer the following questions below.**

1. Describe what you see when you graph each case (be specific.)
2. Does each graph look familiar? What function families are they?
3. What is the equation that fits each graph? ☺

**20.** Use the graphed sequence in #18.

**a)**

**b)**

**c)**

**21.** Use the graphed sequence in #19.

**a)**

**b)**

**c)**