FST Name:

PS 4.4 Date: Block:

***Problem Set 4.4***

**1 – 3] Give the recursive and explicit notation for the geometric sequence.**

1.)1, -4, 16, -64, … 2.) 4, 24, 144, 864, … 3.) 120, 180, 270, 405, . . .

Recursive: Recursive: Recursive:

Explicit: Explicit: Explicit:

4.) What is the 7th term of the geometric sequence 7, -4.2, 2.52, -1.512, . . . ?

5.) Find the explicit formula for the **geometric sequence** where a4 = 500 and the common ratio is 5.

6.) Find the explicit formula for the **geometric sequence** where a2 = -40 and a4 = -10.

7.) Find the explicit formula for the **arithmetic sequence** where a3 = 7/4 and a5 = 7/16.

8.) Given the sequence 7, 7, 7, 7, 7, . . . write both a recursive arithmetic formula for the sequence and a recursive geometric formula for the sequence.

Arithmetic: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Geometric: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.) Domestic bees make their honeycomb by starting with a single hexagonal cell, then forming ring after ring of hexagonal cells around the initial cell, as shown. The number of cells in successive rings will form a sequence.



a) Write an explicit formula for the number of cells in the nth ring.

b) What is the total number of cells in the honeycomb after the 9th ring is formed? (Don’t forget to count the initial cell).

10.) In a skydiving formation with R rings, each ring after the first has twice as many skydivers as the preceding ring. The formation for R = 2 is shown below.

a) Let an be the number of skydivers in the nth ring.

Find the explicit formula an.

b) Find the total number of skydivers if there are R = 4 rings.

 c) How many rings would there be in a total of 10235 skydivers were in the formation?