

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 $a_4 = 500$ and the common ratio is 5.

6.) Find the explicit formula for the **geometric sequence** where $a_2 = -40$ and $a_4 = -10$.

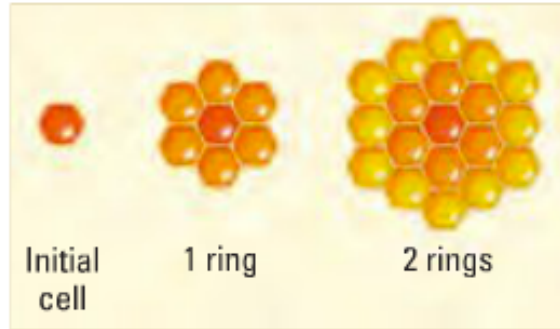
7.) Find the explicit formula for the **arithmetic sequence** where $a_3 = 7/4$ and $a_5 = 7/16$.

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.

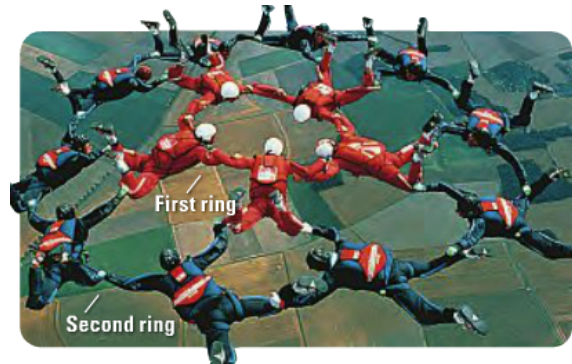


a) Write an explicit formula for the number of cells in the n th ring.

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 a_n be the number of skydivers in the n th ring. Find the explicit formula a_n .



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?