

Sequences Review Homework

Find the indicated term of each sequence.

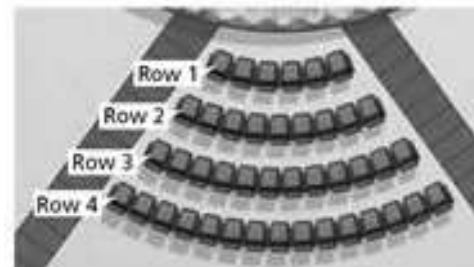
1. 12th term: 7, 14, 28, 56, ... 2. 9th term: 2, 8.5, 15, 21.5, ...

Find the explicit formula and recursive formula for each sequence:

3. 1, 2.5, 6.25, 15.625... 4. 25, 55, 85, 115...

5. 20, 200, 2000, 20000... 6. $\frac{3}{2}, \frac{6}{2}, \frac{9}{2}, \frac{12}{2}, \dots$

7. Seats in a concert hall are arranged in the pattern shown.
The number of seats in the rows form an arithmetic sequence.



- a. Write a rule for the arithmetic sequence.
- b. How many seats are in the 15th row?
- c. A ticket costs \$40. Suppose every seat in the first 10 rows is filled. What is the total revenue from those seats? Show all of your work.

8. The growth of Vanderbilt's squirrel population approximates a geometric sequence. After 4 years there are 2,880 squirrels and after 6 years there are 46,080 squirrels.

a. Write an explicit formula and a recursive formula to model this situation.

b. How many squirrels will there be in 11 years?

9. The recursive formula for a sequence is $a_1 = 25$; $a_n = 3 \cdot a_{n-1}$. What is the explicit formula?

10. Stephen knows the fourth term in an arithmetic sequence is 55 and the ninth term in the sequence is 90. Explain how Stephen can find the common difference. Then find the first term of the sequence and write the explicit formula for the sequence.