Bellwork:

Write the rule for the sequence:

.5,1,1.5,2,2.5,...

Sep 7-11:15 AM

Chapter 12.3: Analyze Geometric Sequences and Series

- In a geometric sequence the ratio of any term to the pervious term is constant

(divide one terms by the previous term)

Sep 7-11:16 AM

ex. Tell whether the sequence is geometric:

a. 4, 10, 18, 28, 40, ...

b. 625, 125, 25, 5, 1, ...

Sep 7-11:19 AM

Rule for Geometric Sequence

$$a_n = a_1 r^{n-1}$$

First Term

Ratio

Sep 7-11:20 AM

ex. Write a rule for the nth term of the sequence, find a_7.

a. 4, 20, 100, 500, ...

b. 152, -76, 38, -19, ...

Sep 7-11:23 AM

ex. One term of a geometric sequence is $a_4=12$. The common ratio is r=2. Write a rule for the nth term and graph.

Sep 7-11:24 AM

ex. Two terms of a geometric sequence are a_3=-48 and a_6=3072. Find a rule for the nth term.

Sep 7-11:26 AM

Sum of a Finite Geometric Series:

$$S_n = a_1\left(\frac{1-r^n}{1-r}\right)$$

Sep 7-11:27 AM

ex. Find the sum of the geometric series:

$$\sum_{i=1}^{16} 4(3)^{i-1}$$

Sep 7-11:29 AM

ex. In 1990, the total box office revenue at US movie theaters was about $5.02 billion. From 1990 through 2003, the total box office revenue increased by about 5.9% per year. Write a rule for the total revenue, let n=1 be 1990. What was the total box office revenue during 1990-2003?

Sep 9-7:12 AM

Homework: Ch 12.3 pg.814
#4-26e,30,36,42,44,48

Sep 9-7:14 AM