Bellwork:

Find the rule for 1, 6, 11, 16

Sep 3-10:24 AM

Chapter 12.2: Analyze Arithmetic Sequences and Series

Arithmetic Sequence- the difference of consecutive terms is constant. This difference is the common difference.

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ex. Tell if an arithmetic sequence.

a. -4, 1, 6, 11, 16

b. 3, 5, 9, 15, 23

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Rule for Arithmetic Sequence

$$a_n = a_1 + (n-1)d$$

first term

common difference

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ex. write the rule and find a_{15}

a. 4, 9, 14, 19, ...

b. 60, 52, 44, 36, ...

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ex. one term of an arithmetic sequence is $a_{19}=48$. The common difference is d=3. Write the rule and graph.

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ex. Two terms for an arithmetic sequence are $a_8=21$ and $a_{27}=97$. Find a rule for the nth term.

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The expression formed by adding the terms of an arithmetic sequence is called an arithmetic series.

Sum of a Finite Arithmetic Series

$$S_n = n\left(\frac{a_1 + a_n}{2}\right)$$

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ex. What is the sum of the arithmetic series:

$$\sum_{i=1}^{20} 3 + 5i$$

Sep 3-10:45 AM

ex. You are making a house of cards. Write a rule for the number of cards in each row if the top row is one. What is the total number of cards in the house with 14 rows.

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Homework: Ch. 12.2 pg.806 #4-20e, 25,28,32,35,38,42,45,56,59

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