

Section 8.2 Arithmetic Sequences and Partial Sums

Objective: In this lesson you learned how to recognize, write, and manipulate arithmetic sequences.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Arithmetic sequence

Common difference

I. Arithmetic Sequences (Pages 589–591)

The n th term of an arithmetic sequence has the form

_____ , where d is the common difference

between consecutive terms of the sequence, and $c = a_1 - d$.

Therefore, an arithmetic sequence may be thought of as a(n)

_____ function whose domain is the set of natural numbers.

What you should learn

How to recognize and write arithmetic sequences

Example 1: Determine whether or not the following sequence is arithmetic. If it is, find the common difference.
7, 3, -1, -5, -9, . . .

Example 2: Find a formula for the n th term of the arithmetic sequence whose common difference is 2 and whose first term is 7.

The n th term of an arithmetic sequence has the alternative recursive formula _____ .

Example 3: Find the sixth term of the arithmetic sequence that begins with 15 and 12.

II. The Sum of a Finite Arithmetic Sequence

(Pages 592–593)

The sum of a finite arithmetic sequence with n terms is

_____.

The sum of the first n terms of an infinite sequence is the

_____.

Example 4: Find the sum of the first 20 terms of the sequence with n th term $a_n = 28 - 5n$.***What you should learn***How to find an n th partial sum of an arithmetic sequence**III. Applications of Arithmetic Sequences** (Pages 593–594)

Describe a real-life problem that could be solved by finding the sum of a finite arithmetic sequence.

What you should learn

How to use arithmetic sequences to model and solve real-life problems

Additional notes**Homework Assignment**

Page(s)

Exercises