Chapter 7  Sequences, Series, and Probability

Section 7.1  Sequences and Summation Notation

Objective: In this lesson you learned how to use sequence, factorial, and summation notation to write the terms and sum of a sequence.

Vocabulary  Define each term or concept.

Terms of a sequence

I.  Sequences  (Pages 535–536)

An infinite sequence is ____________________________

______________________________

A finite sequence is ____________________________

______________________________

To find the first three terms of a sequence, given an expression for its $n$th term, ____________________________

______________________________

______________________________

Example 1:  Find the first five terms of the sequence given by $a_n = 5 + 2n(-1)^n$.

II. Factorial Notation  (Pages 537–538)

If $n$ is a positive integer, $n$ factorial is defined by

______________________________

By definition, zero factorial is ____________________________.
Example 2: Evaluate the factorial expression $\frac{n!}{(n+1)!}$.

III. Series and Summation Notation (Pages 539–540)

The sum of the terms of an infinite sequence is called a(n) ________________________.

The sum of the first $n$ terms of a sequence is called a(n) __________________________ or the ______________________ of the sequence.

The sum of the first $n$ terms of a sequence is represented by the summation or sigma notation,

$$\sum_{i=1}^{n} a_i = \text{______________________________}$$

where $i$ is called the ______________________, $n$ is the ______________________, and 1 is the ________________

______________________.

Example 3: Find the following sum: $\sum_{i=2}^{7} (2 + 3i)$.

What you should learn

How to find the sum of a finite sequence and use summation notation to write the sum of a sequence

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Homework Assignment

Page(s)

Exercises