Arithmetic sequence

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What is a Sequence?

A Sequence is a list of things (usually numbers) that are in order.

Sequence:

3, 5, 7, 9, ...

1st term, 2nd term, 3rd term, 4th term

three dots means goes on forever (infinite)

("term", "element" or "member" mean the same thing)

Here are two examples of arithmetic sequences. Observe their common differences.

Increasing Arithmetic Sequence	Decreasing Arithmetic Sequence
* Common difference is positive!	* Common difference is negative!
5 , 9 , 13 , 17 , ... +4 +4 +4	20 , 17 , 14 , 11 , ... -3 -3 -3

Example 1: Find the next term in the sequence below.

7, 15, 23, 31, ?

First, find the common difference of each pair of consecutive numbers.

7, 15, 23, 31, ?

+8 +8 +8 +8

Since the common difference is +8 ,we can find the next term after 31 by adding 8 to it. Therefore, we have 31 + 8 = 39.

7, 15, 23, 31, 39

Skills practice

Aritmethic sequences

1. **Find the next three terms of each arithmetic sequence and write the common difference.**

	Next three terms			Common difference
a) 3, 6, 9 ,12,...				
b) 5, 7, 9, 11,...				
c) 22,20,18,16,...				
d) 15,13,12,10,...				
e) 10,22,34,46,...				

2. Complete the table.

	Pattern	Is the sequence increasing or decreasing?	Is there a common difference? If so, what is it?
a.	2, 5, 8, 11, 14, ...		
b.	55, 50, 45, 40, ...		
c.	1, 2, 4, 9, 16, ...		
e.	2.6, 2.9, 3.2, 3.5, ...		

INSTRUCTIONS FOR SENDING THE ACTIVITY