



# 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

## Arithmetic 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, ...	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>
b) 5, 7, 9, 11, ...	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>
c) 22, 20, 18, 16, ...	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>
d) 15, 13, 12, 10, ...	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>
e) 10, 22, 34, 46, ...	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/>

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, ...	<input type="text"/>	<input type="text"/>
b. 55, 50, 45, 40, ...	<input type="text"/>	<input type="text"/>
c. 1, 2, 4, 9, 16, ...	<input type="text"/>	<input type="text"/>
e. 2.6, 2.9, 3.2, 3.5, ...	<input type="text"/>	<input type="text"/>

# INSTRUCTIONS FOR SENDING THE ACTIVITY

2 Write an algebraic expression for each phrase.

1. a number  $g$  added to sixty-three

2. the quotient of seven and a number  $x$

3. ten less than a number  $y$

4. the difference of a number  $q$  and  $12$

5. a number  $q$  is divided by  $12$

6. the total of eleven and a number  $x$

7. ninety-seven is divided by a number  $y$

8. the product of a number  $x$  and  $12$

9. the sum of this number and  $12$

10. twenty-three is decreased by a number  $x$

11. twelve divided by a number  $x$

12. a number  $y$  is increased by any number  $x$

13. a number  $w$  decreased by any number  $x$

14. a number  $b$  minus fifty-eight

15. forty-six more than a number  $x$

16. a number  $h$  divided by a number  $x$

17. the sum of a number  $x$  and  $12$

18. the quotient of a number  $x$  and  $12$

19. the product of four and a number  $x$

20. a number  $c$  added to a number  $x$

**When you finish your activity, you will click on the blue button that says FINISH and then you will click on the option: EMAIL MY ANSWERS TO MY TEACHER**

What do you want to do?

3 What do you want to do?

Enter your full name:

Group / level:

School subject:

Enter your teacher's email or key code:

A red circle highlights the "Email my answers to my teacher" button, and a red arrow points from this button to the "Email my answers to my teacher" button in the previous step.

and you will write the following information in the boxes:

- Enter your full name: **ADDISON MONSOON ALEJO BAIN**
- Group / level: **1A**
- School subject: **MATH**
- Enter your teacher's email or key code: **a.m.rios.v@gmail.com**

And finally you will click on the option to send.



**¡EXCELENTE!**