



Arithmetic sequence

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What is a Sequence?

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

Sequence:



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!
$5, 9, 13, 17, \dots$ $+4 \quad +4 \quad +4$	$20, 17, 14, 11, \dots$ $-3 \quad -3 \quad -3$

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, ?
 $+8 \quad +8 \quad +8 \quad +8$

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

Aithmetic 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

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 x

4. the difference

5. a number q is

6. the total of 1 and 2

7. ninety-seven is

8. the product of

9. the sum of the

10. twenty-three

11. twelve divided

12. a number y is

13. a number w decreased by any eight

14. a number b minus fifty-eight

15. forty-six more than

16. a number h divided

17. the sum of a number

18. the quotient of a number

19. the product of four

20. a number c added

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¡EXCELENTE!