

Arithmetic Sequence Answer Key

Algebra II
Worksheet - Arithmetic Sequences & Series
Name _____

What is an arithmetic sequence? Give a definition and an example!

What is the formula for finding the n th term of an arithmetic series?

Find the first 3 terms for the following arithmetic sequences.

1. $a_1 = 12, d = 8$ 2. $a_1 = -7, d = -2$ 3. $a_1 = 34, d = 18$

For the following arithmetic sequences, find a_1 and d .

4. 4, 9, 14, 19, ... 5. 1, 11, 21, 31, ... 6. -5, 4, -3, 2, 1, ...

$a_1 = \dots$, $d = \dots$ $a_1 = \dots$, $d = \dots$ $a_1 = \dots$, $d = \dots$

Use the formula to find the indicated term of each arithmetic sequence.

7. Find a_8 for $a_1 = 7, d = 8$ 8. Find a_8 for $a_1 = 4, d = 2$ 9. Find a_{10} for $a_1 = -3, d = 3$

10. Find a_5 for -17, -13, -9, ... 11. Find a_{11} for 18, 17, 16, ... 12. Find a_6 for 8, 3, -2, ...

Use the formula to find the missing terms of each arithmetic sequence.

13. 15, _____, _____, 33 14. -11, _____, _____, 7 15. -8, _____, _____, 7

Use your formula to solve these story problems.

16. During a free fall, a skydiver falls 16 feet in the first second, 48 feet in the second second, and 80 feet in the third second. If she continues to fall at this rate, how many feet will she fall in the 10th second?

17. A rocket rises 28 feet in the first second, 48 feet in the second second, and 68 feet in the third second. If it continues at this rate, how many feet will it rise in the 10th second?

Arithmetic sequence answer key refers to the solutions and explanations related to arithmetic sequences, which are fundamental concepts in mathematics. An arithmetic sequence is a series of numbers in which each term after the first is generated by adding a constant difference to the previous term. Understanding arithmetic sequences is essential for students as it forms the basis for more complex mathematical concepts. In this article, we will explore what an arithmetic sequence is, how to find the n th term, the common difference, and provide examples with an answer key for better comprehension.

What is an Arithmetic Sequence?

An arithmetic sequence, also known as an arithmetic progression, is a sequence of numbers in which the difference between consecutive terms is constant. This difference is called the "common difference."

Characteristics of Arithmetic Sequences

To better understand arithmetic sequences, let's look at their key characteristics:

- First Term (a): The initial term of the sequence.
- Common Difference (d): The fixed amount added to each term to obtain the next term.
- n th Term (a_n): The term at position n in the sequence.

Formula for Arithmetic Sequences

The formula to find the n th term of an arithmetic sequence is given by: