

Name: _____

Date: _____

Period: _____

QUIZ: ARITHMETIC SEQUENCES

An **arithmetic sequence** is a sequence in which the difference (d) between consecutive terms is constant.

PART I: MULTIPLE CHOICE – Circle the letter of the best answer.

- Which of the following is an arithmetic sequence?
A. 2, 4, 8, 16, 32
B. 3, 7, 11, 15, 19
C. 5, 10, 20, 40, 80
D. 1, 3, 6, 10, 15
- What is the common difference (d) of the sequence 9, 14, 19, 24, 29, ... ?
A. 3 B. 5 C. 9 D. 14
- What is the 7th term of the arithmetic sequence 4, 8, 12, 16, ... ?
A. 24 B. 28 C. 32 D. 36
- Which formula can be used to find the n^{th} term (a_n) of an arithmetic sequence?
A. $a_n = a_1 + (n - 1)d$
B. $a_n = a_1 + nd$
C. $a_n = a_1 - (n - 1)d$
D. $a_n = \frac{a_1 + a_n}{2}$
- If $a_1 = 7$ and $d = -3$, what is a_5 ?
A. -5 B. -2 C. 1 D. 13

PART II: FILL-IN-THE-BLANK – Write your answer in the blank.

- The common difference of the sequence -10, -6, -2, 2, 6, ... is _____.
- The 10th term of the sequence 5, 9, 13, 17, ... is _____.
- In an arithmetic sequence, if $a_1 = 12$ and $d = 4$, then $a_{15} =$ _____.
- The first term of an arithmetic sequence is 20 and the common difference is -5. The 6th term is _____.
- Find the value of n if the n^{th} term of the arithmetic sequence 3, 7, 11, ... is 63.
 $n =$ _____.

PART III: WORD PROBLEMS – Show your work.

- A car rental company charges \$40 on the first day and \$35 each additional day. Write the first five terms of the sequence that represents this situation. Then find the cost of renting a car for 7 days.
- A football team is seated in a stadium. The first row has 28 seats. Each row behind it has 2 more seats than the row in front of it.
 - Write an arithmetic sequence that represents the number of seats in the first five rows.
 - How many seats are in the 15th row?