Activity 7.1: Arithmetic & Geometric Sequences

A

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question about the sequence or series.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

An arithmetic sequence starts $5, 9, 13, 17, \ldots$ Find the 10th term.

Answer: _____ Match? ☐ Yes ☐ No

2

Write the explicit rule a_n for the arithmetic sequence with $a_1 = 7$ and $d = 3$.

Answer: _____ Match? ☐ Yes ☐ No

3

Find the 8th term of the geometric sequence $3, 6, 12, \ldots$

Answer: _____ Match? ☐ Yes ☐ No

4

$a_1 = 2$ and $a_n = 3a_{n-1} - 1$. Find a_3.

Answer: _____ Match? ☐ Yes ☐ No

5

Find the sum $1 + 2 + 3 + \cdots + 20$.

Answer: _____ Match? ☐ Yes ☐ No

6

Find the sum $2 + 4 + 8 + 16 + 32 + 64$.

Answer: _____ Match? ☐ Yes ☐ No

7

Find the sum $8 + 4 + 2 + 1 + \ldots$

Answer: _____ Match? ☐ Yes ☐ No

8

Insert three arithmetic means between 4 and 24. What is the middle mean?

Answer: _____ Match? ☐ Yes ☐ No

Activity 7.1: Arithmetic & Geometric Sequences

B

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question about the sequence or series.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

An arithmetic sequence has $a_1 = -4$ and common difference 5. Find the 10th term.

Answer: _____ Match? ☐ Yes ☐ No

2

An arithmetic sequence has $a_3 = 13$ and $a_5 = 19$. Write the explicit rule a_n.

Answer: _____ Match? ☐ Yes ☐ No

3

A geometric sequence is $6, 12, 24, \ldots$ Find the 7th term.

Answer: _____ Match? ☐ Yes ☐ No

4

$a_1 = 2$ and $a_n = a_{n-1} + 3^{n-1}$. Find a_3.

Answer: _____ Match? ☐ Yes ☐ No

5

Find the sum of the first 10 terms of $3, 7, 11, \ldots$

Answer: _____ Match? ☐ Yes ☐ No

6

Find the sum: $\displaystyle\sum_{k=1}^{6} 2^k$

Answer: _____ Match? ☐ Yes ☐ No

7

Find the sum: $\displaystyle\sum_{n=0}^{\infty} 4\left(\tfrac{3}{4}\right)^n$

Answer: _____ Match? ☐ Yes ☐ No

8

Find the arithmetic mean of 4 and 24.

Answer: _____ Match? ☐ Yes ☐ No