

Arithmetic & Geometric Sequence Worksheet

For Problems 1–4, list the first five terms of each sequence, and identify them as arithmetic or geometric.

1. $A(n + 1) = A(n) + 4$ for $n \geq 1$ and $A(1) = -2$

2. $A(n + 1) = \frac{1}{4} \cdot A(n)$ for $n \geq 1$ and $A(1) = 8$

3. $A(n + 1) = A(n) - 19$ for $n \geq 1$ and $A(1) = -6$

4. $A(n + 1) = \frac{2}{3}A(n)$ for $n \geq 1$ and $A(1) = 6$

For Problems 5–8, identify the sequence as arithmetic or geometric, and write a recursive formula for the sequence. Be sure to identify your starting value.

5. 14, 21, 28, 35, ...

6. 4, 40, 400, 4000, ...

7. 49, 7, 1, $\frac{1}{7}$, $\frac{1}{49}$, ...

8. -101, -91, -81, -71, ...

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For Problems 1–4, list the first five terms of each sequence, and identify them as arithmetic or geometric.

1. $A(n + 1) = A(n) + 4$ for $n \geq 1$ and $A(1) = -2$

$-2, 2, 6, 10, 14$ Arithmetic

2. $A(n + 1) = \frac{1}{4} \cdot A(n)$ for $n \geq 1$ and $A(1) = 8$

$8, 2, \frac{1}{2}, \frac{1}{8}, \frac{1}{32}$ Geometric

3. $A(n + 1) = A(n) - 19$ for $n \geq 1$ and $A(1) = -6$

$-6, -25, -44, -63, -82$ Arithmetic

4. $A(n + 1) = \frac{2}{3}A(n)$ for $n \geq 1$ and $A(1) = 6$

$6, 4, \frac{8}{3}, \frac{16}{9}, \frac{32}{27}$ Geometric

For Problems 5–8, identify the sequence as arithmetic or geometric, and write a recursive formula for the sequence. Be sure to identify your starting value.

5. 14, 21, 28, 35, ...

$f(n + 1) = f(n) + 7$ for $n \geq 1$ and $f(1) = 14$ Arithmetic

6. 4, 40, 400, 4000, ...

$f(n + 1) = 10f(n)$ for $n \geq 1$ and $f(1) = 4$ Geometric

7. 49, 7, 1, $\frac{1}{7}$, $\frac{1}{49}$, ...

$f(n + 1) = \frac{1}{7}f(n)$ for $n \geq 1$ and $f(1) = 49$ Geometric

8. -101, -91, -81, -71, ...

$f(n + 1) = f(n) + 10$ for $n \geq 1$ and $f(1) = -101$ Arithmetic

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