

Recursive – When you just want to find the “next” term. $a_n = a_{n-1} + d$ $g_n = g_{n-1} \cdot r$

Now-Next Formula – you have a number now, what’s the “next” number? (This is what we started with – it’s just a way to write it as a formula.)

Examples: 30, 70, 110, _____, ...

100, -50, 25, _____, ...

Determine whether each sequence is arithmetic or geometric. Then use the appropriate recursive formula to determine the next term or terms in each sequence.

1. 4, 8, 16, 32, ... _____, ...

2. 16, 30, 44, 58, ... _____, ...

3. -68, -83, -98, ... _____, _____, ...

4. -5, 20, -80, ... _____, _____, ...

5. 2, -6, 18, ... _____, ...

6. 7.3, 9.4, 11.5, ... _____, ...

Don't forget Explicit! – When you want to find the “nth” term.

$$a_n = a_1 + d(n - 1) \qquad g_n = g_1 \cdot r^{n-1}$$

(Finding a term down the line somewhere - This is when it doesn't make sense to use the formula for just finding the “next” term.)

Determine whether each sequence is arithmetic or geometric. Then use the appropriate explicit formula to determine the unknown term in the sequence.

7. Determine the 20th term of the sequence
1, 4, 7, ...

8. Determine the 12th term of the sequence
5, 15, 45, ...

9. Determine the 15th term of the sequence
600, 300, 150, ...

10. Determine the 15th term of the sequence -
200, -100, 50, ...