Algebra 1: 4.3 Recursive **Name _____ Period _____**

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.

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

(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.)

Review: **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 75th term of the sequence -200, -100, 0, …