

Do Now

1) What is a formula for the n^{th} term of sequence B shown below?

B = 10, 12, 14, 16, ...
 $\begin{matrix} \checkmark & \checkmark & \checkmark & \checkmark \\ +2 & +2 & +2 & \end{matrix}$
 $a_1 = 10$
 $d = 2$

Key
 $a_n = b_n$

- a) $b_n = 8 + 2n$
- b) $b_n = 10 + 2n$
- c) $b_n = 10(2)^n$
- d) $b_n = 10(2)^{n-1}$

$a_n = a_1 + d(n-1)$
 $a_n = 10 + 2(n-1)$
 $a_n = 10 + 2n - 2$
 $a_n = 2n + 8$

2) Given: $a_1, a_2, a_3, a_n, \dots$
 14, 21, 28, 35, ...
 $\begin{matrix} \checkmark & \checkmark & \checkmark & \checkmark \\ \leftarrow & +7 & +7 & +7 \end{matrix}$

a) Identify the sequence as arithmetic or geometric. Explain

Arithmetic B/c you add 7 repeatedly

b) If you were to graph this sequence, what would the result look like?

linear.

c) Write an explicit formula for the sequence. Be sure to identify your starting value

$a_1 = 14$
 $d = 7$
 $a_n = a_1 + d(n-1)$
 $a_n = 14 + 7(n-1)$
 $a_n = 14 + 7n - 7$

beginning $a_0 = 7$

d) Find the 100th term in this sequence.

$n = 100$
 $a_n = 7n + 7$
 $a_{100} = 7(100) + 7$
 $a_{100} = 700 + 7$
 $a_{100} = 707$

$a_n = 7n + 7$