3-4 Reteach to Build Understanding

Arithmetic Sequences

1. Arithmetic sequences can be written using a recursive formula or an explicit formula. The formulas share some variables, but not others.

   Recursive formula

   $a_n = a_{n-1} + d$

   Explicit formula

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

   Write the variable next to its description.

   _____ the nth term of the sequence

   _____ the first term of the sequence

   _____ the common difference

   _____ the previous term of the sequence

   _____ the term number in the sequence

2. Susan wrote the recursive formula for the sequence represented by the explicit formula $a_n = 3 + 2n$. Put an X next to any incorrect statements and correct her error(s).

   Step 1: Identify the common difference.

   The common difference is 3.

   Step 2: Find the first term of the sequence.

   $a_1 = 3 + 2(1) = 5$

   Step 3: Write the recursive formula.

   $a_n = a_{n-1} + 3$ and $a_1 = 5$

3. Van needs to enter a formula into a spreadsheet to show the outputs of an arithmetic sequence that starts with 13 and continues to add seven to each output. For now, Van needs to know what the 15th output will be. Complete the steps needed to determine the 15th term in the sequence.

   $a_n = a_1 + (n-1)d$ The explicit formula is $a_1 = 13$, $d = 7$.

   $a_n = $ _____ $+ (n-1)$_____   Substitute Van's values for a_1 and d.

   $a_n = $ _____   Simplify.

   $a_n = $ _____   Simplify.

   $a_{15} = $ _____   Substitute _____ for n.

   $a_{15} = $ _____   Solve for a_{15}.

   $a_{15} = $ _____   The 15th term in the sequence will be _____.