Example 2 **Insert four terms in an arithmetic sequence between 2 and 37 and write the rule using functional notation.**

The first number in the sequence is 2, that corresponds to the ordered pair (1, 2). Since 2 is the first term and I'm looking for 4 terms, that means 37 is the 6th term of the sequence. So that is represented by (6, 37).

To determine what is being added to each term, I find the slope.

$$m = \frac{37-2}{6-1} = \frac{35}{5} = 7$$

Since the slope is 7, my sequence becomes 2, 9, 16, 23, 30, 37

Writing the function, I use the Point-Slope Form of a Line
$y - y_1 = m(x - x_1)$ and pick the easiest ordered pair to substitute, which in my opinion is (1, 2)

$y - 2 = 7(x - 1)$, when simplified is $y = 7x - 5$. Writing that using functional notation, we have $f(x) = 7x - 5$