Describing Sequences Quiz Solutions

1. $a_0 = 0^2 - 1 = -1$; $a_1 = 1^2 - 1 = 0$; $a_2 = 2^2 - 1 = 3$; $a_3 = 3^2 - 1 = 8$. No, it is not an arithmetic sequence because the difference between consecutive terms is not constant.

2. A sequence of partial sums is a new sequence formed by summing up the terms of an original sequence. The nth term of the sequence of partial sums is the sum of the first n terms (or n+1 terms if starting from index 0) of the original sequence.

3. 19 is the next element in the sequence. The closed formula for the sequence is $a_n = 4n + 3$. The recursive definition for the sequence is $a_0 = 3$; $a_n = a_{n+1} + 4$ for $n \geq 1$.