MTH 225 Discrete Structures 1 **Smith**

2.2.3 Sums of sequences

1. Consider the sequence 7, 13, 19, 25,....,121.

a) Is the sequence arithmetic, geometric, or neither?

b) Write a closed formula for a_n assuming $a_0 = 7$.

c) How many terms are in the sequence?

d) Write the sum of the sequence using Σ notation and use an appropriate formula to compute the sum exactly.

2. Consider the sequence 75, 15, 3, $\frac{3}{5}$, ..., $\frac{3}{78125}$.

a) Is the sequence arithmetic, geometric, or neither?

b) Write a closed formula for a_n assuming $a_0 = 75$.

c) How many terms are in the sequence?

d) Write the sum of the sequence using Σ notation and use an appropriate formula to compute the sum exactly.

3. Consider the sequence 2, 6, 18, 54, ..., 354294.

a) Is the sequence arithmetic, geometric, or neither?

b) Write a closed formula for a_n assuming $a_0 = 2$.

c) How many terms are in the sequence?

d) Write the sum of the sequence using Σ notation and use an appropriate formula to compute the sum exactly.

4. Consider the sequence 3, 7, 11, 15, ..., $4t + 3$.

a) Is the sequence arithmetic, geometric, or neither?

b) Write a closed formula for a_n assuming $a_0 = 3$.

c) How many terms are in the sequence?

d) Write the sum of the sequence using Σ notation and use an appropriate formula to compute the sum exactly.