

1. The first row in a triangular parking lot parks 7 cars. Each row that follows parks 4 more cars than the row in front of it.

a. Write a recursive definition for this sequence.

b. Find the total number of cars that can be parked in the first six rows. Justify your answer.

2. Derive the formula for the sum of an arithmetic series.

3. Represent the series $12 + 16 + 20 + 24 + 28 + 32 + 36 + 40 + 44 + 48 + 52 + 56$ using summation notation.

4. Write the series in sigma notation for: $80 + 85 + 90 + 95 + 100 + 105$

5. Expand this series and find the sum: $\sum_{n=1}^5(4n - 1)$

6. Schroeder Hall at Illinois State University has a lecture hall in which the first row has 30 seats. Each subsequent row has 2 more seats. If there are 30 rows in this lecture hall,

a. how many total seats are there? Justify your answer.

b. Write this problem using summation notation.