

Name _____

Date _____

Advanced Algebra
Unit 1: Sequence and Series
Assignment #4

LT: I can sum up a partial sums of an arithmetic series

Example:

$2+4+6+8+\dots$ is an example of a arithmetic series. Notice how the terms are now separated by the addition signs instead of the commas. This is how you can identify the notation.

Find S_8 . This is asking us to find the sum of the first 8 terms. Notice how we use the S when we are talking about a series. What do we use when we are talking about a sequence? _____

What is the difference between the two notations? _____

The formula for the partial sums of an Arithmetic Series is $S_n = \frac{n(U_1+U_n)}{2}$

So in the original example find S_8 . Well $U_1 = 2$ and $U_8 = 16$ so $\frac{8(2+16)}{2} = 72$

Find the sums of the given series

1) Given the series $3+6+9+\dots$ Find S_{12}

2) Given the series $6+12+18+24+\dots$ Find S_{14}

3) Given $U_4 = 14$ and $U_8 = 22$ Find S_{12}

4) Given $U_3 = -15$ and $U_7 = -27$ Find S_{10}

5) Find $\sum_{n=1}^{10} 3x + 5$

6) Find $\sum_{n=1}^{15} -2x + 8$

7) Given the following arithmetic sequence, Find S_{60}

$$\begin{cases} U_1 = 18 \\ U_n = U_{(n-1)} + 4 \\ n \geq 2 \end{cases}$$

8) Given the following arithmetic sequence, Find S_{52}

$$\begin{cases} U_1 = 24 \\ U_n = U_{(n-1)} - 6 \\ n \geq 2 \end{cases}$$

