

I. Find the sum of the first n terms for each series. Must show work!

1.) first 3 terms for $a_n = 2n - 6$ $S_3 = -6$	2.) first 5 terms for $a_n = 4 - 5n$ $S_5 = -55$	3.) first 4 terms for $a_n = \frac{1}{2}n + 3$ $S_4 = 17$
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II. Find sum for each arithmetic series described. Must show work!

4.) $a_1 = 16, a_n = 98, n = 13$ $S_{13} = 741$	5.) $a_1 = 5, n = 11, d = 4$ $S_{11} = 275$	6.) $d = -8, n = 16, a_n = -108$ $S_{16} = -768$
7.) $8 + 15 + 22 + \dots + 155$ $S_{20} = 1793$	8.) first 17 positive odd integers $S_{17} = 289$	9.) $a_1 = 14, n = 21, d = -6$ $S_{21} = -966$
10.) $d = \frac{2}{5}, n = 10, a_n = \frac{19}{5}$ $S_{10} = 20$	11.) $a_n = 148, a_1 = -20, n = 25$ $S_{25} = 1600$	12.) multiples of 3 between 3 and 78 inclusive $S_{26} = 1053$

III. Use the arithmetic series formula to complete each problem. Must show work!

13.) What is the first term if the sum of the first 12 terms is 1,260 and the last term is 204? $a_1 = 6$	14.) How many terms were added together if first term is 5, the last term is 113, and the sum is 1,121? 19 terms	15.) What is the last term if the sum of first 25 terms is -525 and the first term is 15? $a_n = -57$	16.) What is the second term of the series if the sum of first 16 terms is -120 and the 16 th term is 15? $a_2 = -27$
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III. Find the sum using the appropriate method.

17.) $\sum_{n=1}^3 6n + 2$ $S_3 = 42$	18.) $\sum_{n=4}^8 4 - 7n$ $S_5 = -190$	19.) $\sum_{n=1}^{20} 4n - 3$ $S_{20} = 780$	20.) $\sum_{n=6}^{32} 3(2n + 3)$ $S_{27} = 3321$
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