Name: _____ Date: _____

6.6 Arithmetic Series

BLM 6–9

1. Determine the sum of the first 15 terms in each arithmetic series.
a) 11 + 14 + 17 + 20 + …
b) –16 – 13 – 10 – 7 – …
c) 8 + 6 + 4 + 2 + …
d) –1 – 3 – 5 – 7 – …

2. Determine the sum of each arithmetic series.
a) 5 + 7 + 9 + 11 + … + 31
b) 6 + 13 + 20 + … + 76
c) 19 + 31 + 43 + 55 + … + 151
d) 20 + 14 + 8 + … –70

3. The 23rd term in an arithmetic sequence is 95. The 31st term is 127. Find the sum of the first 31 terms in the series.

4. The sum of the first 10 terms in an arithmetic sequence is 145. The 5th term in the series is 16.
a) List the first five terms of the series.
b) Find the sum of the first 20 terms in the series.

5. Determine the sum of the first 21 terms in a series where the terms are given by the formula $t_n = 5 - 3n$.

6. At a logging camp, tree trunks are piled up in a pyramid shape ready for transport. The first row of trees has 27 tree trunks lying side by side. The next row has 26 tree trunks, and each successive row has one fewer tree trunk. The top row has 18 tree trunks. How many tree trunks are there altogether?

7. Find an expression for the sum of the first
a) n even integers
b) n odd integers

8. Find the sum of the first 17 terms in the following series.
a) 2 + 4 + 6 + 8 + …
b) 1 + 3 + 5 + 7 + 9 + …

9. Use the expressions from question 7 to check your answers to question 8.

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