Pre-Calculus Name: _____

Arithmetic series

Find the sum of the series associated with the given sequence.

1) $11,\ \frac{25}{2}, 14,\ \frac{31}{2}, 17$

2) $-11, -13, -15, -17, -19$

3) $-\frac{7}{3}, -\frac{2}{3},\ 1,\ \frac{8}{3},\ \frac{13}{3}, 6$

4) $9.5, 11.8, 14.1, 16.4, 18.7$

Evaluate each arithmetic series described.

5) $\sum_{n=4}^{23}\left(-\frac{13}{10}+\frac{1}{2}n\right)$

6) $\sum_{i=4}^{17}(2i-5)$

7) $\sum_{i=4}^{18}(5i+5)$

8) $\sum_{i=1}^{17}(6-2i)$

9) $\sum_{m=5}^{24}(9m-1)$

10) $\sum_{n=1}^{33}(0.8n+6.3)$

11) $a_1 = 7,\ d = 6,\ n = 9$

12) $a_1 = -3,\ d = -4,\ n = 9$

13) $4 + 6 + 8 + 10 \ldots,\ n = 17$

14) $31 + 38 + 45 + 52 \ldots,\ n = 18$

Evaluate each series.

15) $\sum_{m=1}^{7} (3m^2 + 3)$

16) $\sum_{n=4}^{9} (30 - n^2)$

Determine the number of terms n in each arithmetic series.

17) $a_1 = 6,\ a_n = 31,\ S_n = 111$

18) $14 + 24 + 34 + 44 \ldots,\ S_n = 2180$

Rewrite each series using sigma notation.

19) 5 + 10 + 15 + 20

20) 5 + 8 + 11 + 14 + 17 + 20

21) 11.3 + 12.2 + 13.1 + 14…, S_n = 134.1

22) 9 + 12 + 15 + 18…, S_n = 561