

## Arithmetic series

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

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

70

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

-75

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

11

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

70.5

Evaluate each arithmetic series described.

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

109

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

224

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

900

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

204

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

2590

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

656.7

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

279

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

-171

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

340

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

1629

Evaluate each series.

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

441

16)  $\sum_{r=1}^7 (30 - r^2)$

-91

Determine the number of terms  $n$  in each arithmetic series.

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

6

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

20

Rewrite each series using sigma notation.

19)  $5 + 10 + 15 + 20$

$$\sum_{n=1}^4 (5n)$$

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

$$\sum_{n=1}^6 (3n+2)$$

21)  $11.3 + 12.2 + 13.1 + 14 \dots, S_n = 134.1$

9

22)  $9 + 12 + 15 + 18 \dots, S_n = 561$

17