

## Arithmetic Series

**Evaluate the related series of each sequence.**

1) 13, 15, 17, 19, 21, 23  
108

2) 6, 11, 16, 21, 26, 31, 36  
147

3) 22, 28, 34, 40, 46  
170

4) 39, 49, 59, 69  
216

**Evaluate each arithmetic series described.**

5)  $\sum_{k=1}^{35} (5k - 2)$   
3080

6)  $\sum_{i=1}^{35} (3i - 13)$   
1435

7)  $\sum_{m=1}^{15} 4m$   
480

8)  $\sum_{m=1}^{10} (7m - 2)$   
365

9)  $\sum_{i=1}^6 3i$   
63

10)  $\sum_{n=1}^{45} (3n - 9)$   
2700

11)  $a_1 = 42, a_n = 146, n = 14$   
1316

12)  $a_1 = 4, a_n = 22, n = 10$   
130

13)  $a_1 = 2, a_n = 122, n = 13$   
806

14)  $a_1 = -18, a_n = -102, n = 13$   
-780

15)  $20 + 27 + 34 + 41 \dots, n = 16$   
1160

16)  $20 + 30 + 40 + 50 \dots, n = 15$   
1350

17)  $7 + 9 + 11 + 13 \dots, n = 10$   
160

18)  $10 + 12 + 14 + 16 \dots, n = 11$   
220

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

19)  $a_1 = 19, a_n = 96, S_n = 690$   
12

20)  $a_1 = 16, a_n = 163, S_n = 4475$   
50

21)  $a_1 = 19, a_n = 118, S_n = 822$   
12

22)  $a_1 = 15, a_n = 79, S_n = 423$   
9

23)  $a_1 = -3, d = 2, S_n = 21$   
7

24)  $a_1 = 4, d = 7, S_n = 228$   
8

25)  $(-2) + (-12) + (-22) + (-32) \dots, S_n = -224$   
7

26)  $(-16) + (-26) + (-36) + (-46) \dots, S_n = -1818$   
18