

9.2

Arithmetic Sequences & Series

Arithmetic Sequence

$$a_n = a_1 + (n-1)d$$

* d is the common difference

Find the common difference for each arithmetic sequence.

a. 5, 8, 11, 14, 17

b. 9, 5, 1, -3, -7

c. $1, \frac{7}{6}, \frac{4}{3}, \frac{3}{2}, \frac{5}{3}$

Find a formula for the n th term of the arithmetic sequence whose common difference is 5 and whose first term is -1.

Find the tenth term of the arithmetic sequence where $a_1 = 8$ and $a_2 = 20$.

The eighth term of the arithmetic sequence is 25 and the 12th term is 41.
Write the first five terms of this sequence.

Sum of a Finite Arithmetic Sequence

$$S_n = \frac{n}{2}(a_1 + a_n)$$

Find the sum of the following series.

a. $40 + 37 + 34 + 31 + \dots + 22$

b. $1 + 2 + \dots + 35$

Sum of a Finite Arithmetic Sequence

$$S_n = \frac{n}{2}(a_1 + a_n)$$

Find the sum of the following series.

c. 50th partial sum of $-6, -2, 2, 6, \dots$

d. $\sum_{i=1}^{25} 4i - 1$