Arithmetic Sequence

Finding the nth term of an arithmetic sequence: $a_n = a_1 + (n-1)d$

Find the formula for the nth term of an arithmetic sequence

1.   1, 5, 9, …   2. $-12, -10, -8, …$

Find the number of terms in this finite arithmetic sequence

3.   1, 3, 5, … , 15   4. $2, -2, -6, … , -66$

Formula for the nth term of an arithmetic sequence

5.   -9, -7, -5, … ; a_{12} 6.   7, 2, -3, … ; a_{15}

Find the sum of the indicated number of terms of the arithmetic sequence $S_n = \dfrac{n}{2}(a_1 + a_n)$

7. $\displaystyle\sum_{n=1}^{12} (4-n)$ 8.   20, 15, 10, … ; n = 40

Applications

9.   The distance that an object dropped from a helicopter will fall is 16 feet in the first second, 48 feet in the next second, 80 feet in the third second, and so on in an arithmetic sequence. What is the total distance the object will fall in 5 seconds?

10.   A display of cans in a grocery store consists of 36 cans in the bottom row, 31 cans in the next row, and so on in an arithmetic sequence. The top row has 6 cans. Find the total number of cans in the display.

11.   The salary schedule for an engineering assistant is $2500 for the first month and a $160-per-month salary increase for the next 9 months. Find the monthly salary during the tenth month. Find the total salary for the 10-month period.