The Problem Set

In finding sums and terms, show that you're using formulas rather than just simply doing all the work on your calculator. Of course, a calculator double-check is a fun way to check to see if your theory is on the mark.

1. Find the forty-ninth term, a_{49} of the arithmetic sequence 7, 4, 1, …

2. Find the first term, a_1, and the common difference, *d*, of the arithmetic sequence whose third term, a_3, is 16 and whose fifteenth term, a_{15}, is -8.

3. For the arithmetic sequence 18, 13, 8, 3, …

   a. Find the common difference *d*.
   b. Find the twenty-fourth term a_{24}.
   c. Find the sum, S_{36}, of the first 36 terms.

4. Find the first term, a_1, and common difference, *d*, of the arithmetic sequence whose sum of the first 12 terms, S_{12}, is 246 and whose twelfth term, a_{12}, is 37.

5. For the arithmetic sequence 3, 7/2, 4, 9/2, …

   a. Find the common difference *d*.
   b. Find the eleventh term, a_{11}.
   c. Find the sum, S_{50}, of the first 50 terms.

6. A ball rolling down an inclined plane moves 8 feet the first second. In each second thereafter it moves 16 feet more than in the preceding second.

   a. How far will the ball move during the tenth second?
   b. How far will it have moved during the first 10 seconds?

7. Find the sum of the first 10,000 terms of the arithmetic sequence whose tenth term, a_{10}, is -11 and whose nineteenth term, a_{19}, is -71.