Algebra 2 Honors Extra Fun Problems Section 11.2

1. -296 is which term of the sequence 7, 4, 1, . . . ?

2. If $a_{28} = -82$ and $a_{12} = -50$, find a_{75}.

3. Find a rule for the nth term, in terms of x, for the sequence $2x + 1, 3x + 3, 4x + 5, \ldots$

4. Arithmetic means are terms in an arithmetic sequence between two given terms. Insert 5 arithmetic means between 2 and 62.

5. How many multiples of 7 are there between 50 and 500?

6. Prove: If p, m, and r form an arithmetic sequence, then $m = \frac{p+r}{2}$.

7. Write in summation notation: $10 + 12 + 14 + 16 + \ldots + 50$

8. Find the sum: $82 + 79 + 76 + \ldots + 46$.

9. Find the first 3 terms of an arithmetic sequence where $a_{25} = -151$ and $S_{25} = -1975$.

10. Find the sum of the positive 3-digit integers divisible by 6..

11. Find a formula, in terms of n, for the sum of the first n odd counting numbers.

12. Show that if S_n represents the sum of the first n terms of an arithmetic series with first term a_1 and common difference d, then $S_n = n\left[\frac{2a_1 + (n-1)d}{2}\right]$.

[Hint $S_n = n\left(\frac{a_1 + a_n}{2}\right)$]