Sequences worksheet

1. Find the next 3 terms in the following sequences
   a. 1, 3, 5, 7, ...
   b. 10, 7, 4, 1, ...
   c. -18, -14, -10, ...
   d. 1, 4, 9, 16, ...
   e. 1, 8, 27, ...
   f. 1, 1, 2, 3, 5,.....

2. Find the n^{th} term for the following sequences and use it to find the 50^{th} term
   a. 2, 5, 8, ...
   b. 7, 9, 11, ...
   c. 4, 9, 14, ...
   d. 10, 7, 4, ...
   e. 5, 10, 15, ...
   f. 8, 13, 18, ...
   g. -4, -6, -8, ...

3. Find the 30^{th} term of the sequence when the n^{th} term is:
   a. $3n - 1$
   b. $5n + 6$
   c. $(n-10)^2$
   d. $4n - 50$

4. A sequence is 4, 7, 10, ... Determine whether 103 is a term in the sequence. (Hint: find the n^{th} term formula)

5. A sequence is 7, 3, -1, ... Determine whether -51 is a term in the sequence.

6. Find the n^{th} term when the sequence is 4, 10, 18, 28, ... (Hint: the sequence is quadratic)

7. Find the n^{th} term when the sequence is -2, 3, 12, 25, 42, ...

8. Find the n^{th} term and the 10^{th} term when the sequence is 0, 5, 12, 21, 32, ...

9. A grain of rice is placed on square 1 of a chess board, followed by:
   2 grains on square 2,
   4 grains on square 3,
   8 grains on square 4,
   16 grains on square 5
   Determine how many grains are on the last square of the chess board