1. Problems 33.2, 36.1, 38.5, 38.6

2. Following link provides a data structure to store sparse matrices:
   
   http://www.cs.utexas.edu/users/inderjit/courses/cs383c/sparse_matrices.txt

   Write a matlab code using the above specified data structure to compute the matrix-vector product \( y = Ax \) in \( O(nz) \) operations, where \( nz \) is the number of non-zero entries in the sparse matrix \( A \). Also write a matlab code to compute \( y = A^T x \) in \( O(nz) \) operations. Note that you should not explicitly create \( A^T \) to solve the latter problem.