## Sample Problem 6

The purpose of these practice problems is to apply what the student has learned as well as to aid in retention. This is not for a grade! However, if the student completes all the sample problems, the student will be able to turn all sample problems in for extra credit worth 50 points at the end of the course.

## 1 Everything

Create a function that ties into a main program. Have the main program be titled as ExampleProgram7_Loops.m and the function it is calling Program7_Function.m. Create a function that requires the input of the size of a square matrix, $n$. In the function have a loop fill a n by n vector with the first component as 1 and the second as 2 and so on. Prior to the end of the matrix, implement an if statement where if the matrix is on its last component set it equal to 12 . In the main program pass a value for n into the function and set the function call equal to $A$. Now create a vector of ones the size of $n$ and set the vector to $b$. Take the inverse of A and multiply with b. Do you have to transpose b?

