For both projects, your report should contain a quick summary of what you did and the complete code, in Matlab in principle. If you wish to use a different language, please let me know in advance.

You should preferably send me everything by email, pjabin@umd.edu. But if this is really not possible, a paper copy is acceptable.

**Program 1. Implement the gaussian elimination.**
Implement a function

```
function x = gaussian[a, y, n]
```

which should return the vector $x$ obtained after using Gaussian elimination on the linear system $Ax = y$ of size $n$.

**Program 2. Implement a Jacobi iterative method.**
Given a matrix $A = D + R$ with $D$ the diagonal part and $R$ the rest, the Jacobi’s method consists in calculating the sequence of vectors $X^k$ defined by

$$D X^{k+1} = y - RX^k.$$  

Implement a function

```
function x = jacobi[a, y, n, k]
```

which should return the vector $X^k$ obtained after $k$ steps of the previous method starting from point $X^0 = 0$ on the linear system with matrix $A$ of size $n$ and righthand side $y$. 
