1. Find the solution for x in equation Ax=B, where A= $\begin{bmatrix} 1 & 2 & 1 \\ 2 & 3 & 2 \\ -1 & 0 & 1 \end{bmatrix}$ and B= $\begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix}$ Create a

   function which will consists matrix A and B as input arguments and x will be the output argument.

2. **Recursion and the Factorial Function:** A function is said to be recursive if the function calls itself. MATLAB functions are designed to allow recursive operation. To test this feature, write a MATLAB function to evaluate the factorial function, which is defined as follows:

$$N! = \begin{cases} N(N-1)!...N \geq 1 \\ 1.............N = 0 \end{cases}$$

   Where, N is a positive integer. The function should check to make sure that there is a single argument N, and that N is a non-negative integer. If it is not, generate an error using the error function. If the input argument is a nonnegative integer, the function should evaluate N! using the above equation

   .

3. **Hyperbolic Functions:** Write three MATLAB functions to calculate the hyperbolic sine, cosine, and tangent functions:

$$\sinh(x) = \frac{e^x - e^{-x}}{2} \quad \cosh(x) = \frac{e^x + e^{-x}}{2} \quad \tanh(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$$

   Use your functions to plot the shapes of the hyperbolic sine, cosine, and tangent functions

4. Write a MATLAB program to find simple interest using function.
5. Write a MATLAB program using function to check whether a number is prime or not?