6. Interpolation, Least Squares Method

1. Write an m-file for Newton interpolation
   A file name: `newtonip`

   - Input parameters: The nodes of interpolation and the function values in nodes
   - Output arguments: Coefficients of interpolation polynomial (in Newton form).
   - Draw a picture to illustrate the interpolation. (It is practical to write another function to evaluate a polynomial in Newton form. It gets coefficients nodes and the point where we want the value of polynomial and gives back the value(s).)

2. Write an m-file for draw the B-Splines of interval [0,1]
   File name: `bsplinedraw`

   - Input parameters: indexes of B-spline
   - Output arguments: No need
   - We can use the recursion of B-Splines.

3. Write an m-file for approximation with least squares method.
   The name of file: `lsmapprox`

   - Input arguments: order of polynomial (n), nodes of approximation (in a vector), vector of function values in nodes
   - Output argument(s): the coefficients of the polynomial
   - Let us draw a picture to illustrate the approximation. (We can use the included function `polyval`)