Lab 6

Cubic spline interpolation

1. Consider the function: $f(x) = sin(x)$ defined on $[0, 2\pi]$ and the nodes $0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}, 2\pi$.

   a) display the value of the function, the value of the cubic natural spline and the value of cubic clamped spline function at $x = \frac{\pi}{4}$.

   b) plot the graphs of the function, the cubic natural spline and the cubic clamped spline function, in the same figure.

   (Use Matlab function *spline*).

2. There are given 5 arbitrary points, using Matlab function *ginput*. Plot the points and the graph of cubic natural spline function that passes through all the given points.