Exercise

1. Download plot1d.m and apply it to plot y=cos(x)
2. Create a noise sample from the curve of y=cos(x). The sample can be denoted by S1={(x_i, y_i)}, where $y_i = \cos(x_i)+ n_i$ and n_i denotes noise. Plot paired data of S in a figure.
3. Download plot2d.m and apply it to plot y=g(x1,x2)=tanh(0.6*x1+0.2*x2) +tanh(0.1*x1-0.8*x2)
4. Create a noise sample from the surface of y=g(x1,x2). Let S2={(x_i, y_i)} denote the sample. Then $y_i = f(x_{i1}, x_{i2})+ n_i$ and n_i denotes noise. Plot paired data of S2 in a figure.
5. Download NNSYSID toolbox and learn_MLP.m
   A. Apply learn_MLP.m to derive a neural network subject to paired data of S2.
   B. Implement the matlab function defined at page 15.
   C. Implement the matlab function defined at page 23.
   D. Employ your functions to calculate the mean square error of approximating paired data of S2 by the neural network derived by learn_MLP.m.
6. Download and execute demo_fa2d.m of page 24.
7. Download and execute fa1d.m of page 24.