1. Use the MATLAB command to draw a surface plot of the following functions:

z =y2 \*exp(-x2-y2)

Where x is equally divided into 21 points between [-2, 2], and y is equally divided into 21 points between [-1, 1], so this surface has 21\*21=441 points.

1. Use the ‘meshgrid’ command to build up a meshgrid in the x-y plane.
2. Plot the surface and the mesh of the z(x,y).

Figure;

x = 0:pi/20:4\*pi;

plot(x,cos(x))

hold on

plot(x,exp(-0.5\*x).\*sin(x),'o')

get the handel for the one of these two lines and use it to change two properties of this line.

1. (a) Use the ‘Curve Fitting app’ with common ‘cftool’ to estimate the best fitting parameters of the data by utilizing the following two models:
2. y = a1\*xb1+a2\*xb2
3. y=(x-a) n+c

, and you are given the data:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| y value | 2 | 14 | 43 | 90 | 170 | 250 | 378 | 530 | 715 | 870 |

1. Use the best fitting to predict the value of y given x=15.
2. Explain the value of SSE and R-square in the Goodness of fit.