I. Summary

1.plot

DATA
At least one paired vectors with the same length.

STYLE

color	character	marker	symbol	line	symbol
yellow	y	circle	o	solid	-
magenta	m	Plus sign	+	dashed	–
cyan	c	Asterisk	*	dotted	:
red	r	Point	.	dash-dot	-.
green	g	Cross	x		
blue	b	Square	s		
white	w	Diamond	d		
black	k	Pentagram	p		
		Hexagram	h		

ARGUMENT

keyword	description
'Color'	line color
'LineStyle'	line style
'LineWidth'	line width
'Marker'	Marker Symbol
'MarkerEdgeColor'	Marker outline color
'MarkerFaceColor'	Marker fill color

EXPANSION
Function plot3 can display 3D curve receiving three vectors with the same length. Besides, we can use ezplot to plot implicit function.

2.bar

DATA
One Vector: horizontal cordinate is natural number and longitudinal cordinate is value.
Two Vector: horizontal cordinate represents values in the first vector and longitudinal cordinate is the second vector.
Matrix : display data in each column by group.

STYLE

'grouped':Display each group as adjacent bars that are centered around their corresponding x value.
'stacked':Display each group as one multicolored bar. The length of a bar is the sum of the elements in the group. If y is a vector, then the result is the same as 'grouped'.
'histc':Display the bars in histogram format, in which the bars in a group touch one another. The trailing edge of each group is aligned with the corresponding x value.
'hist':Display the bars in histogram format. Each group is centered at the corresponding x value.

ARGUMENT

keyword	description
'BaseValue'	baseline value
'LineStyle'	Line style of bar outlines
'LineWidth'	Width of bar outlines
b	Bar objects

3.mesh

DATA
The function plots the values in matrix Z as heights above a grid in the x-y plane defined by X and Y. The edge colors vary according to the heights specified by Z. Matrixes X and Y come from vector x and y which represent the way to divide cordinates.

INPUT
x-coordinates specified as a matrix the same size as Z, or as a vector with length n, where [m,n] = size(Z). If you do not specify values for X and Y, mesh uses the vectors (1:n) and (1:m).
y-coordinates, specified as a matrix the same size as Z or as a vector with length m, where [m,n] = size(Z). If you do not specify values for X and Y, mesh uses the vectors (1:n) and (1:m).
z-coordinates specifies the height of the mesh plot at each x-y coordinate. If you do not specify the colors, then Z also specifies the mesh edge colors.
Color array, specified as an m-by-n matrix of colormap indices or as an m-by-n-by-3 array of RGB triplets, where Z is m-by-n.
To use colormap colors, specify C as a matrix. For each grid point on the mesh surface, C indicates a color in the colormap. The CDataMapping property of the surface object controls how the values in C correspond to colors in the colormap.
ARGUMENT

keyword	description
'EdgeColor'	Edge line color
'LineStyle'	Line style
'FaceColor'	Face color
'FaceAlpha'	Face transparency
'FaceLighting'	Effect of light objects on faces

EXPANSION
Function the syntax of surf is quite similar to function mesh but with color on the surface of the object. In addition, we can set light from certain angle.

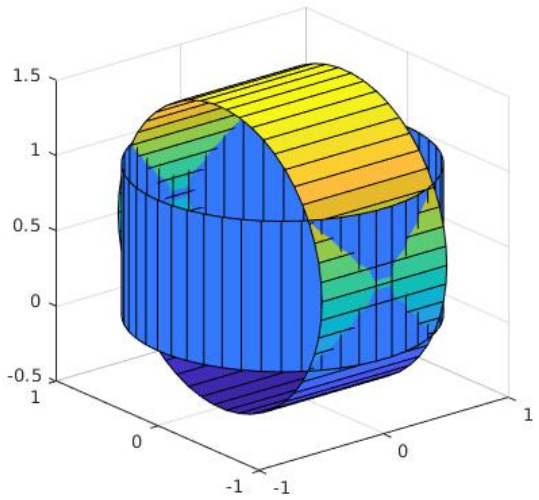
II. Questions in Handouts

Plot two cylinders with the same radius cross each other

CODE

```
[x, y, z] = cylinder(1,50);
surf(x,y,z);
axis square;
hold on
[x1, y1, z1] = cylinder(1,50);
z1 = z1 - 0.5;
y1 = y1 +0.5;
surf(z1,x1,y1);
hold off
```

PICTURE



Julia Set

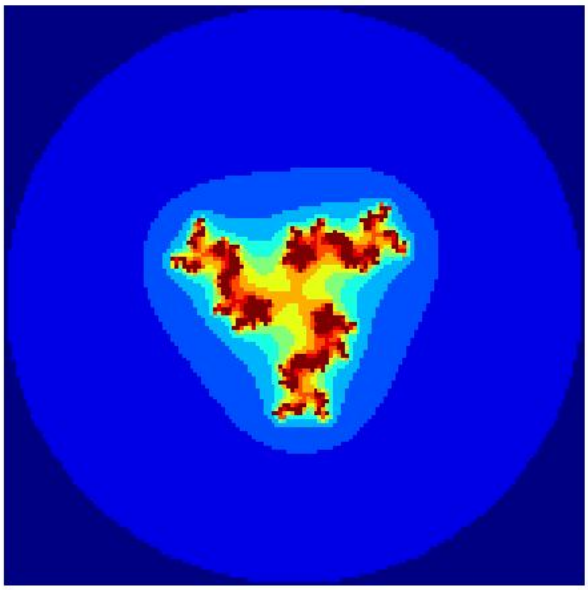


Figure 1: Iterate using a cubic equation

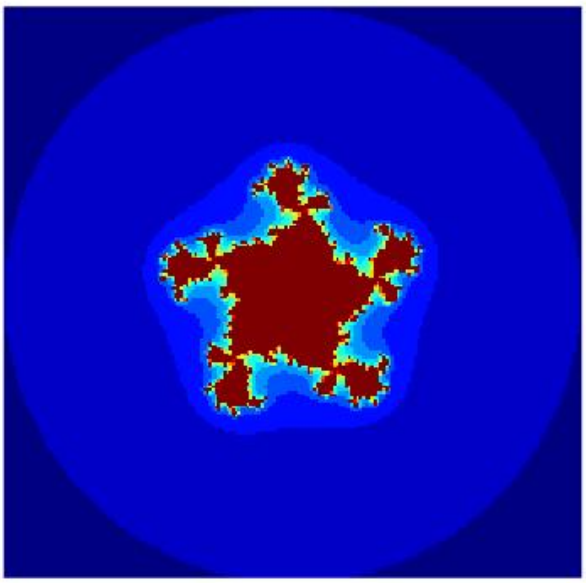


Figure 2: Iterate using a quintic equation