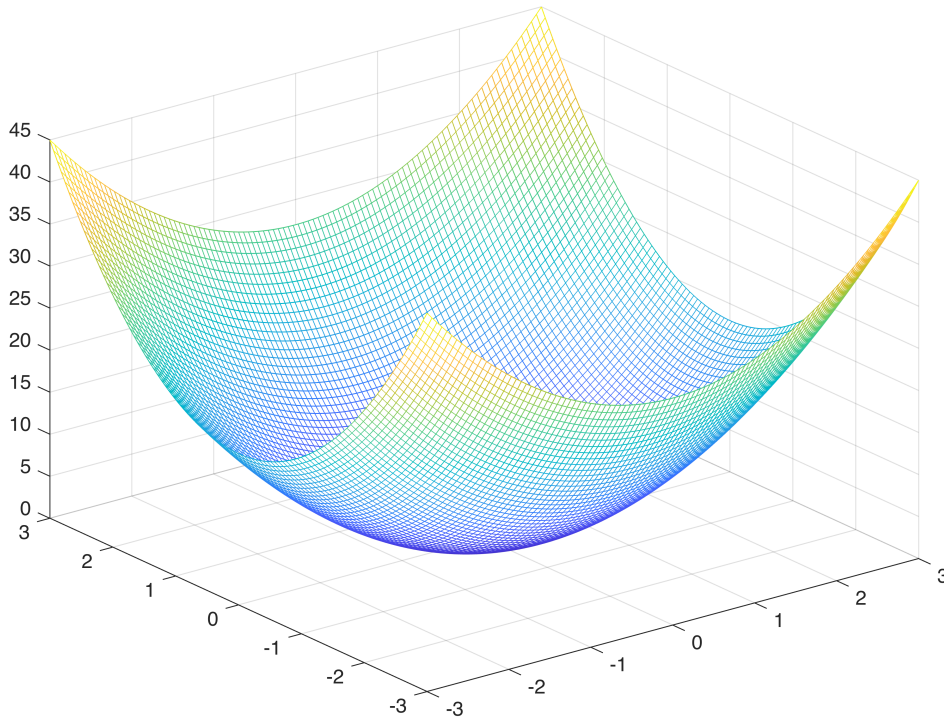


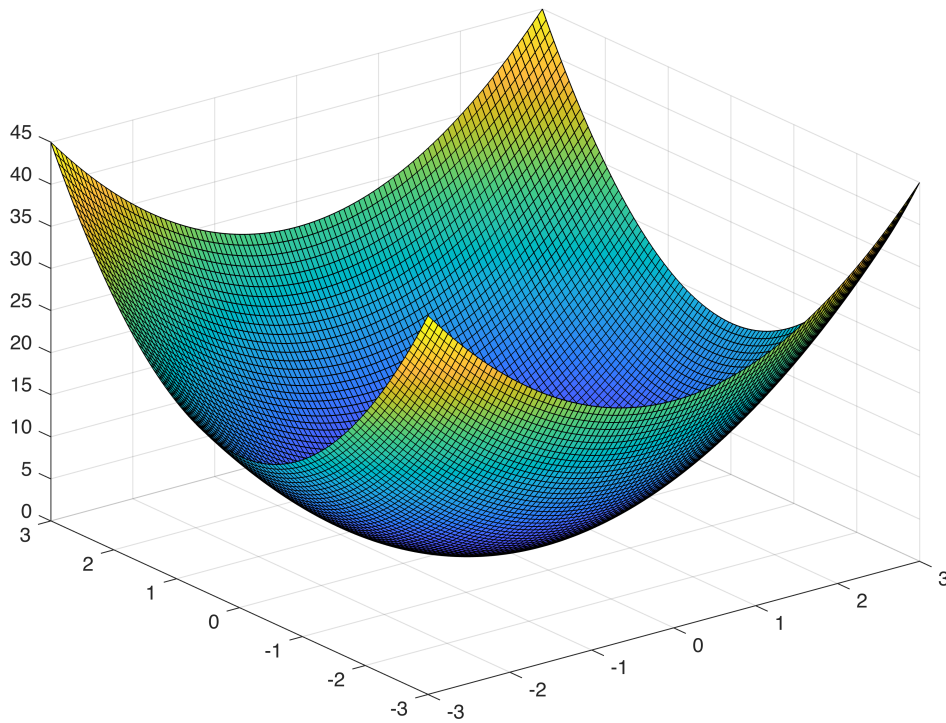
Plotting Real-Valued Function of Two Variables in MATLAB

$$z = f(x, y) = 2x^2 + 3y^2$$

```
x = linspace(-3,3);  
y = linspace(-3,3);  
[x,y]= meshgrid(x,y);  
z = 2*x.^2 + 3* y.^2;  
mesh(x,y,z)
```



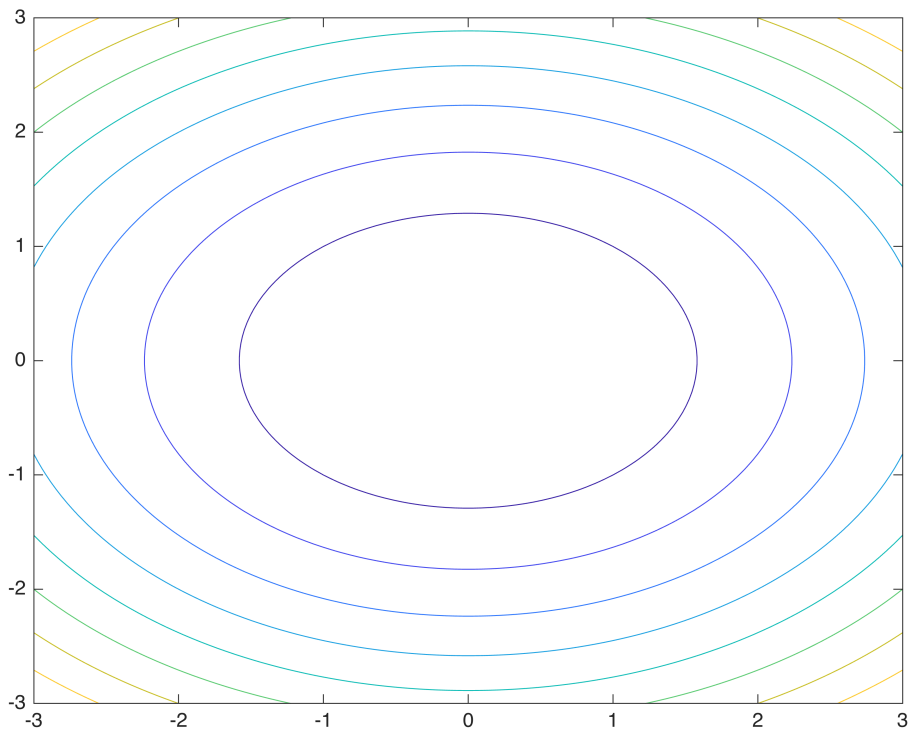
```
surf(x,y,z)
```



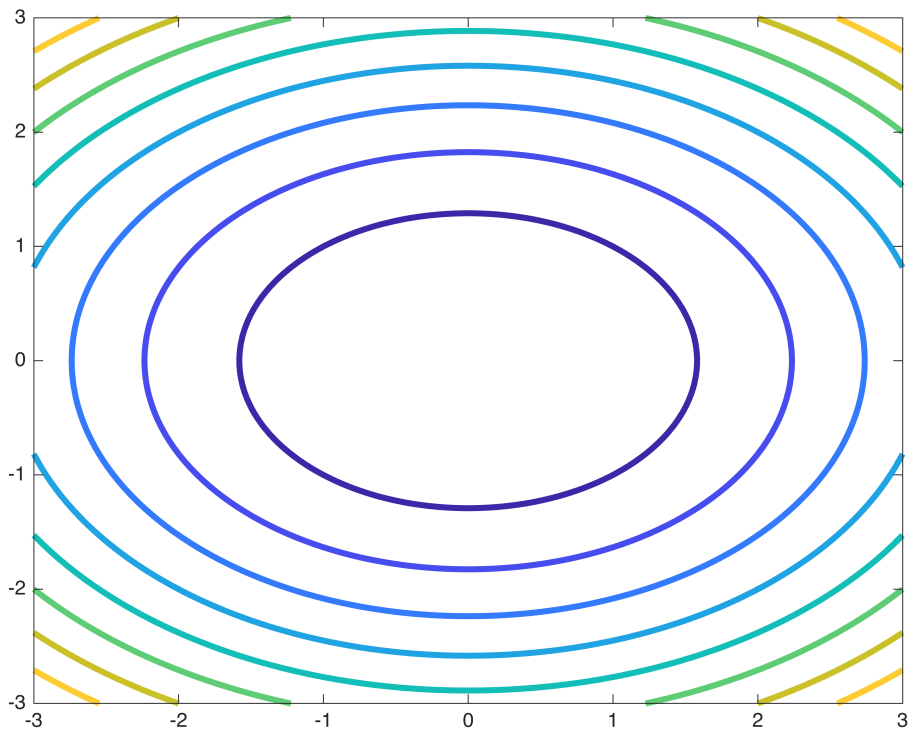
Contours for $z = 2x^2 + 3y^2$

Cross-Sections for Various z's

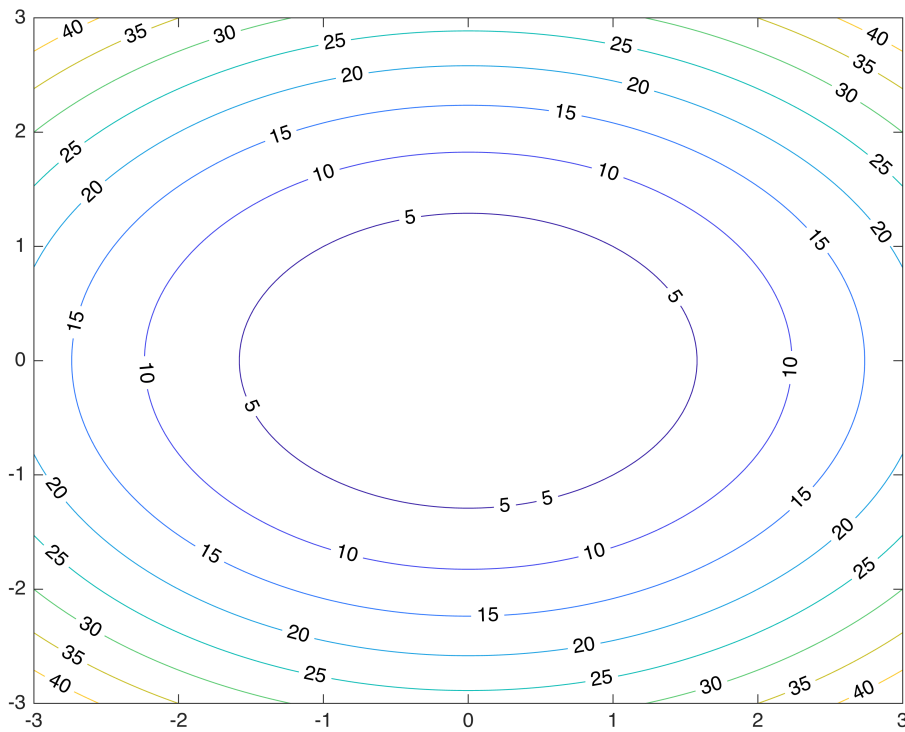
```
contour(x, y, z)
```



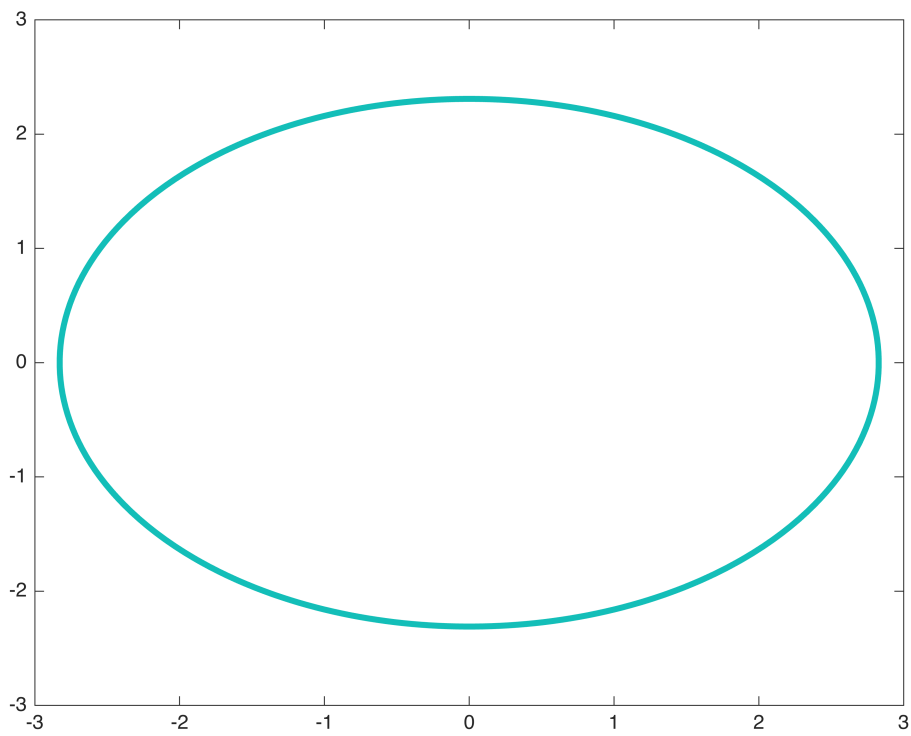
```
contour(x,y,z, 'LineWidth',3)  
hold off
```



```
contour(x,y,z, 'ShowText','on')  
hold off
```

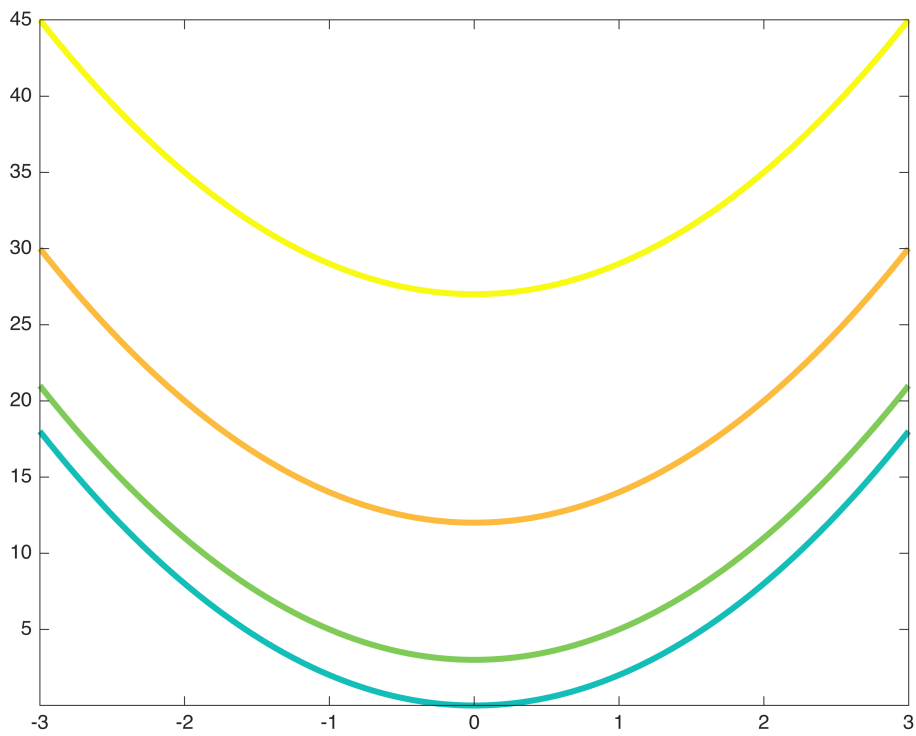


```
% Specify a Particular Value of z  
v=[16, 16];  
contour(x,y,z,v,'LineWidth',3)
```



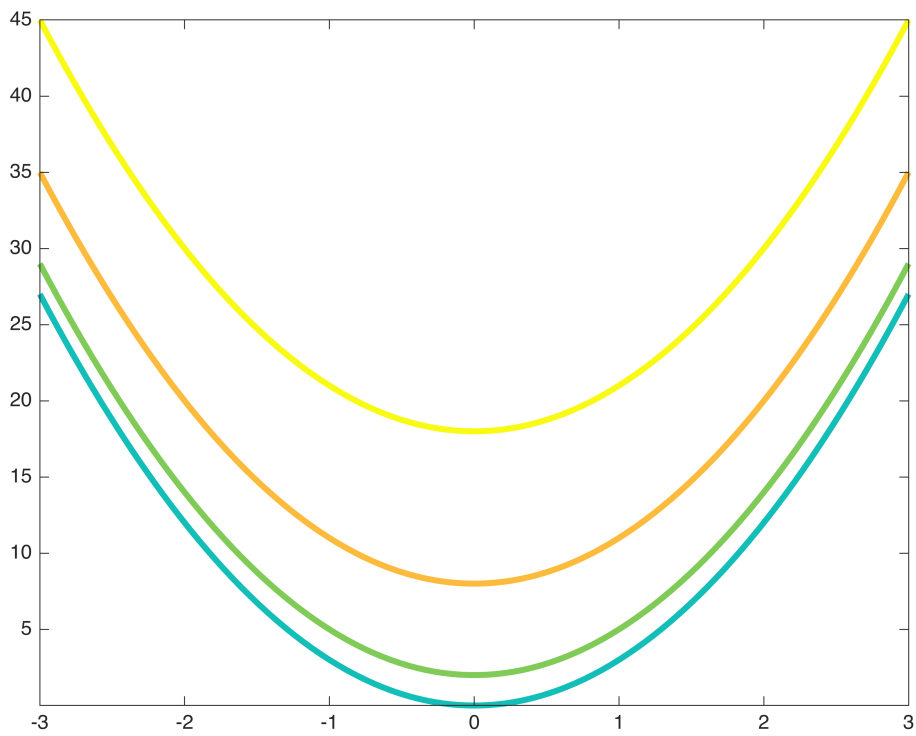
Cross-Sections for Various y's

```
contour(x,z,y, 'LineWidth',3)
```



Cross-sections for Various x's

```
contour(y,z,x, 'LineWidth',3)
```

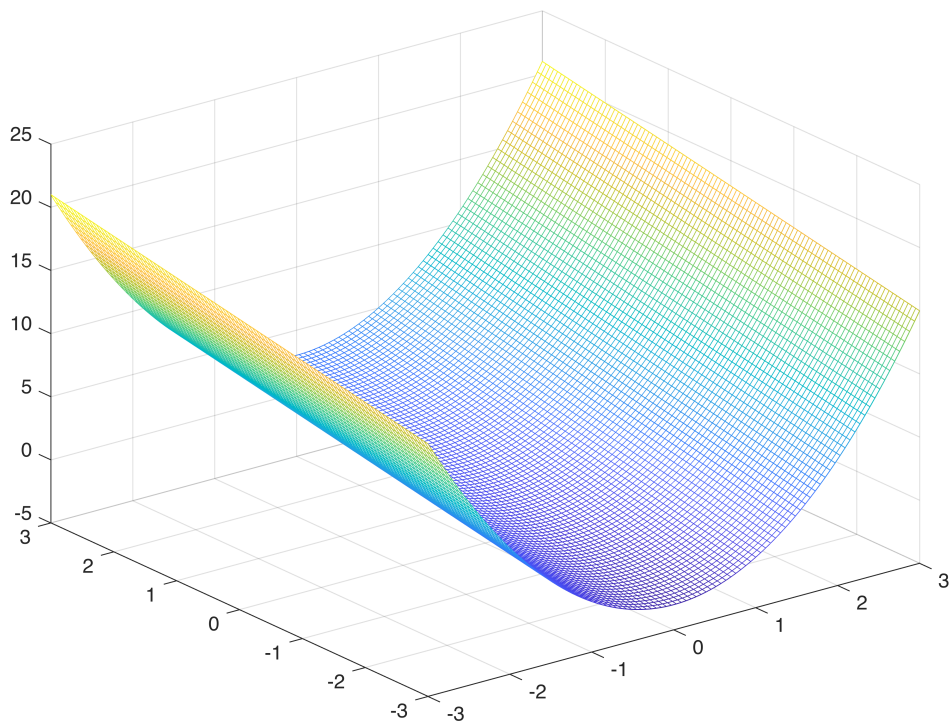


Plots for $z = 2x^2 + y$

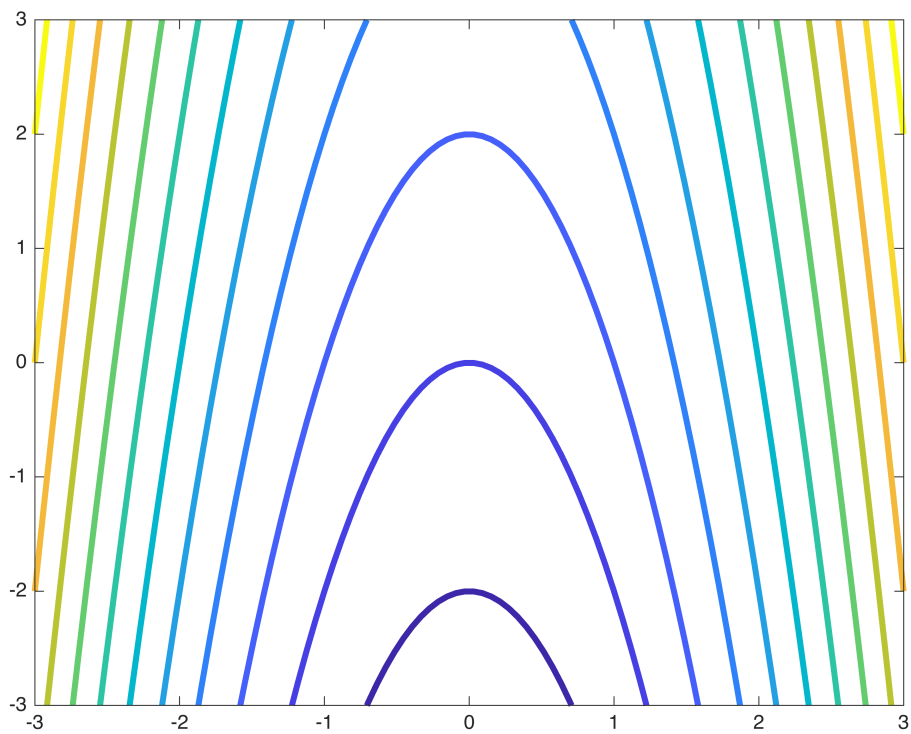
```
z = 2*x.^2 + y; '['
```

```
ans =  
 '['
```

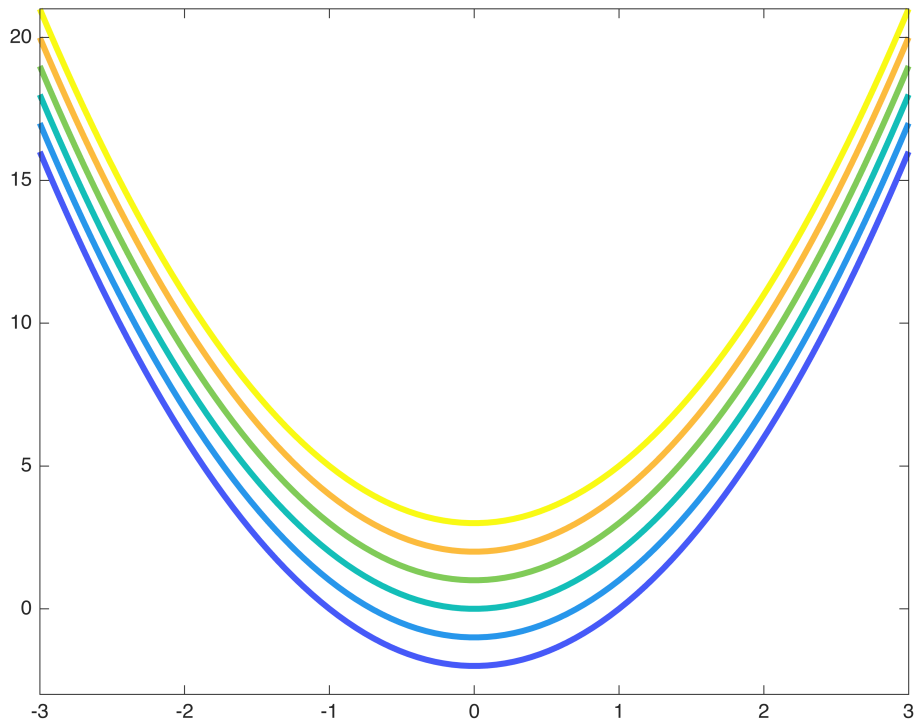
```
mesh(x,y,z)
```



```
contour(x,y,z,'LineWidth',3)
```




```
contour(x,z,y, 'LineWidth',3)
```



```
contour(y,z,x, 'LineWidth',3)
```

