

```
clear all
```

```
X = double(imread( 'lenna256.jpg' ));
```

```
whos
```

Name	Size	Bytes	Class	Attributes
X	256x256	524288	double	

```
sm3 = (1/9) * [1 1 1; 1 1 1; 1 1 1]
```

```
sm3 = 3x3
```

0.1111	0.1111	0.1111
0.1111	0.1111	0.1111
0.1111	0.1111	0.1111

```
sm5 = (1/25) * [1 1 1 1 1; 1 1 1 1 1; 1 1 1 1 1; 1 1 1 1 1; 1 1 1 1 1]
```

```
sm5 = 5x5
```

0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400

```
sh3 = (1/9) * [1 1 1; 1 -8 1; 1 1 1]
```

```
sh3 = 3x3
```

0.1111	0.1111	0.1111
0.1111	-0.8889	0.1111
0.1111	0.1111	0.1111

```
sh5 = (1/25) * [1 1 1 1 1; 1 1 1 1 1; 1 1 -24 1 1; 1 1 1 1 1; 1 1 1 1 1]
```

```
sh5 = 5x5
```

0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	-0.9600	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400
0.0400	0.0400	0.0400	0.0400	0.0400

```
Ysm3 = imfilter(X,sm3);
```

```
Ysm5 = imfilter(X,sm5);
```

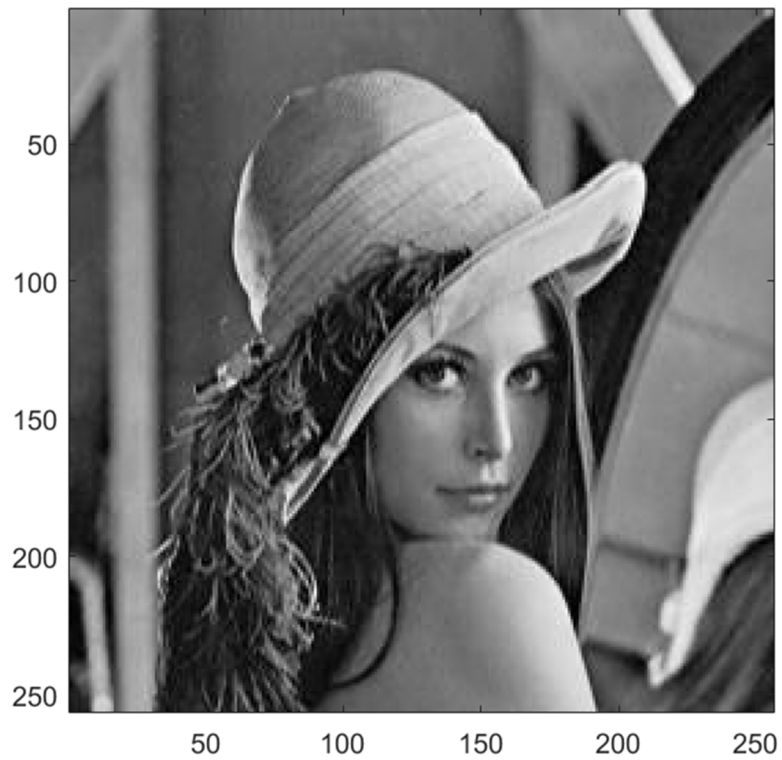
```
Ysh3 = imfilter(X,sh3);
```

```
Ysh5 = imfilter(X,sh5);
```

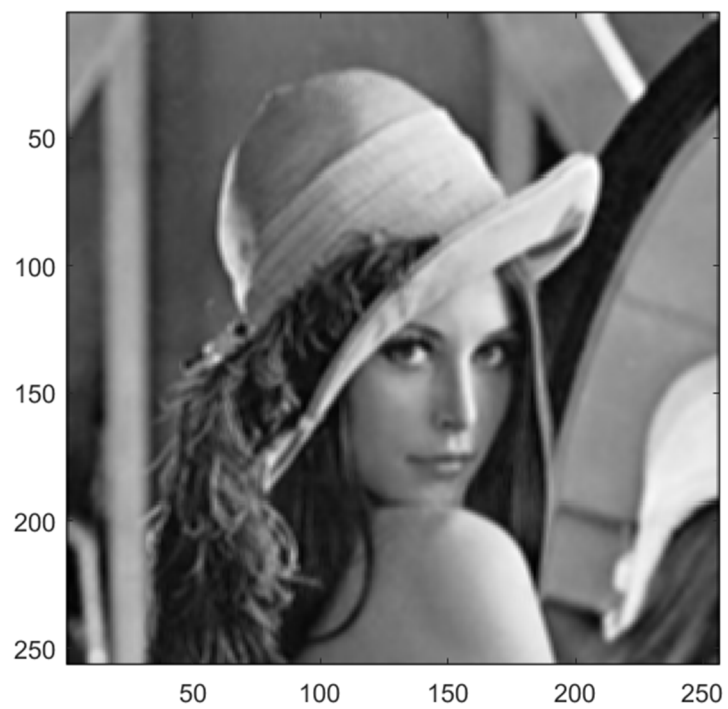
```
Zsh3 = X - Ysh3;
```

```
Zsh5 = X - Ysh5;
```

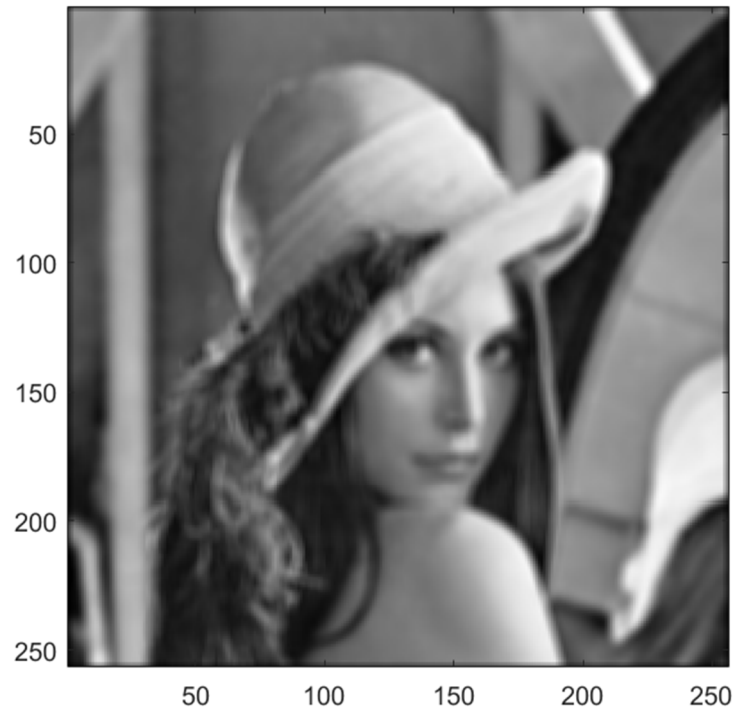
```
imagesc( X )  
colormap( gray ( 256 ) )  
axis image
```



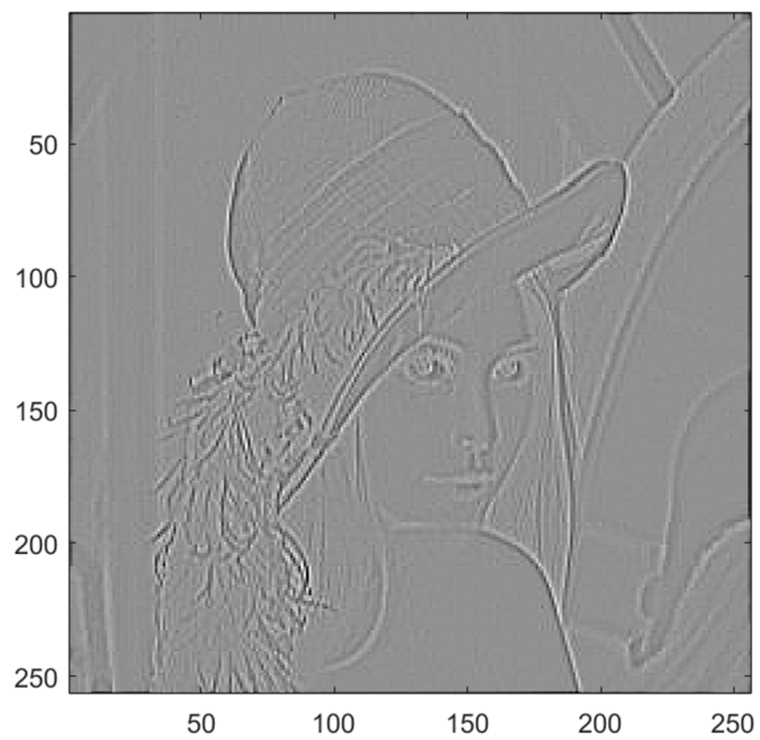
```
imagesc( Ysm3 )  
colormap( gray ( 256 ) )  
axis image
```



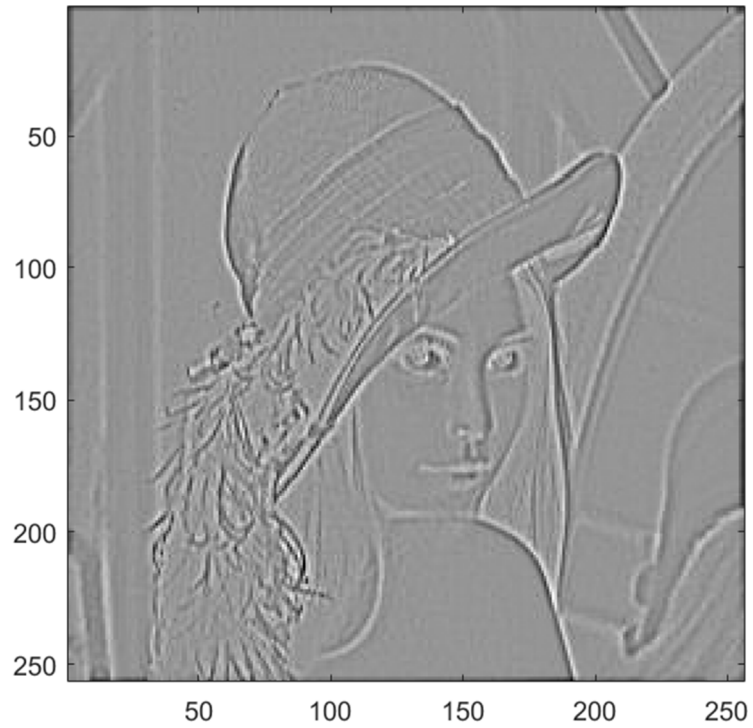
```
imagesc( Ysm5 )  
colormap( gray ( 256 ) )  
axis image
```



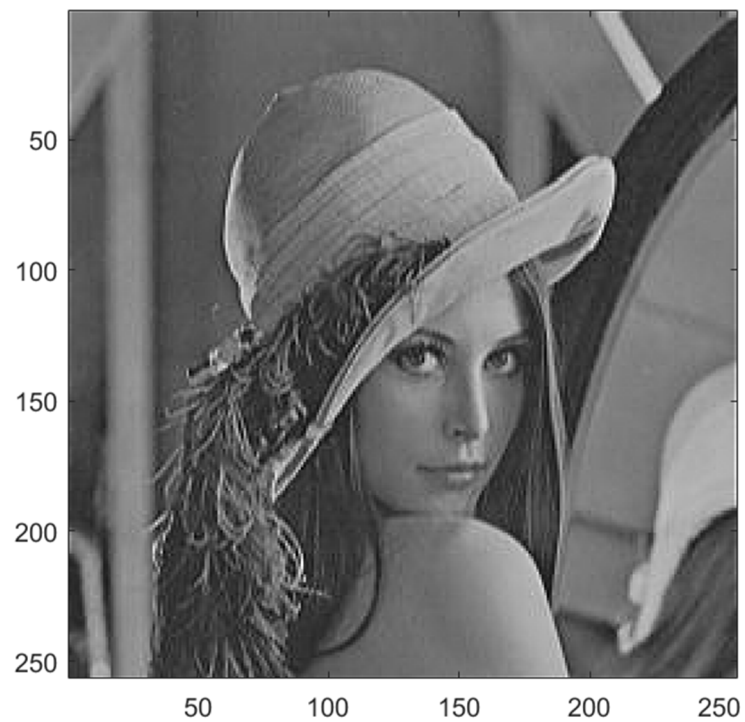
```
imagesc( Ysh3 )  
colormap( gray ( 256 ) )  
axis image
```



```
imagesc( Ysh5 )  
colormap( gray ( 256 ) )  
axis image
```



```
imagesc( Zsh3 )  
colormap( gray ( 256 ) )  
axis image
```



```
imagesc( Zsh5 )  
colormap( gray ( 256 ) )  
axis image
```

