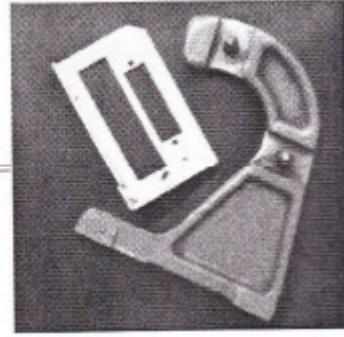
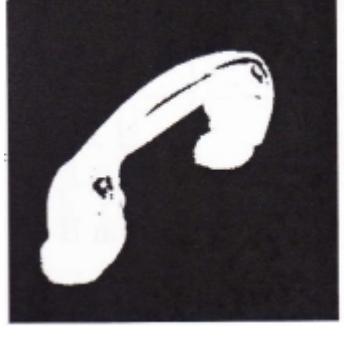
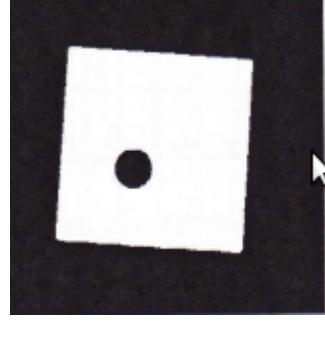
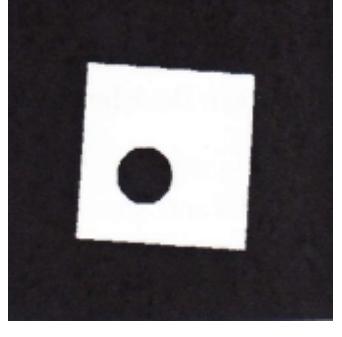
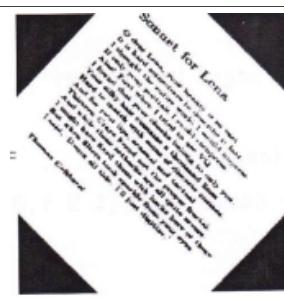
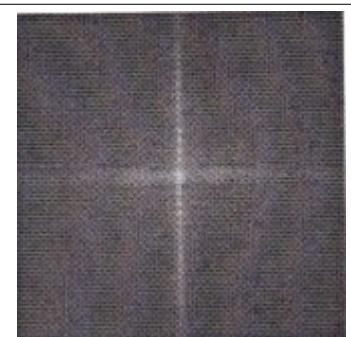
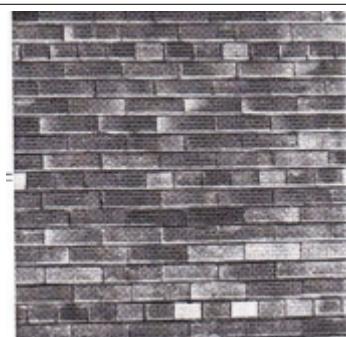


Formel	Eingabebild (x)	Ausgabebild
<code>im2wb(x, 200/255)</code>		
<code>im2bw(x, 100/255)</code>		
<code>im2bw(x, 200/255)</code>		
<code>1-im2bw(x, 100/255)</code>		
<code>imerode(x, strel('disk',11))</code>		

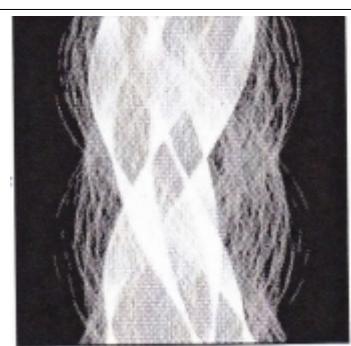
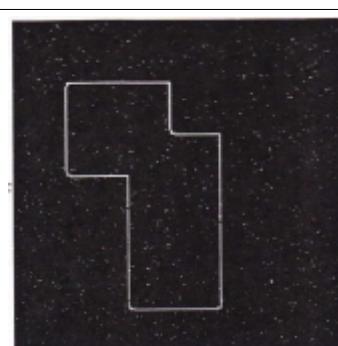
```
log1p(abs(fftshift(fft2(x))))
```



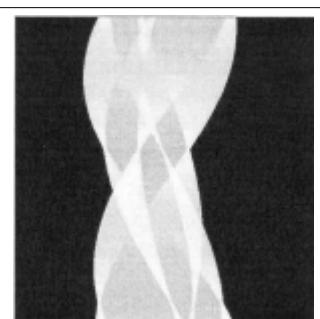
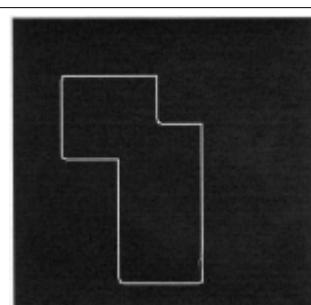
```
log1p(abs(fftshift(fft2(x))))
```



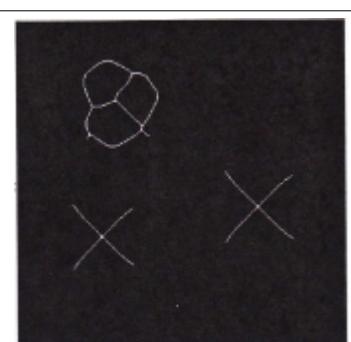
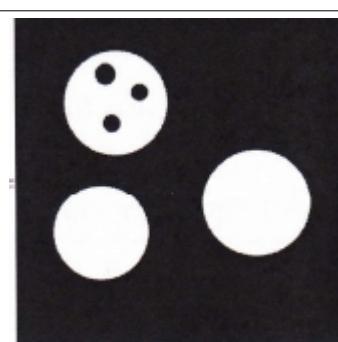
```
„Hough-Transform“(x)
```



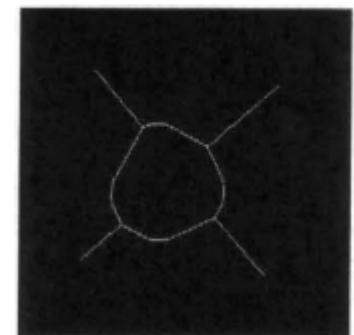
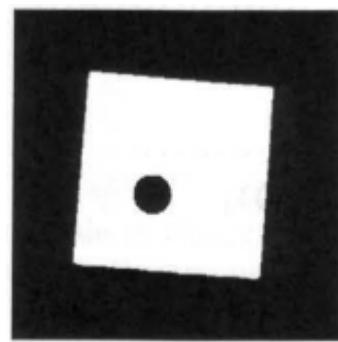
```
Hough-Transform(X)
```



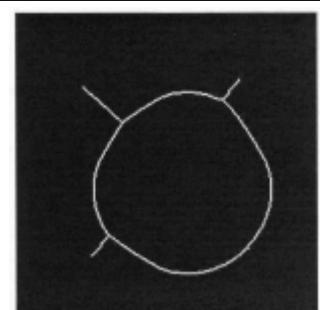
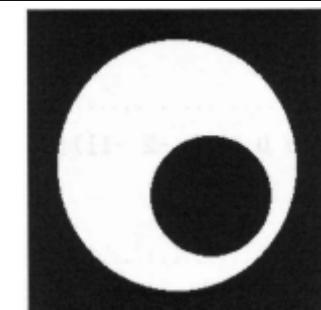
```
bwmorph(x, 'skel', Inf)
```



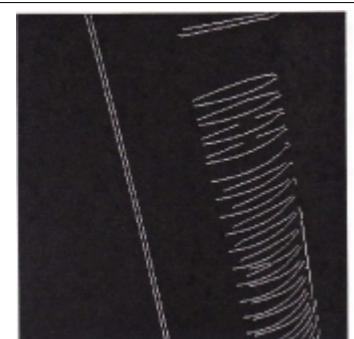
```
bwmorph (X, 'skel', Inf)
Der Kreis in der Mitte beschreibt das
ge-thinnte Loch in der Mitte, die
davon ausgehenden Kanten reichen
bis in die Ecken des
Ursprungsrechtecks. Sie werden nicht
entfernt, weil beim Thinning ab einer
Linienbreite von einem Pixel nicht
mehr weiter entfernt wird.
```



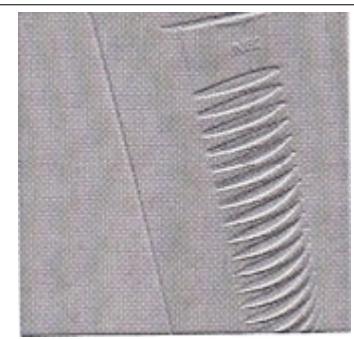
```
bwmorph (X, 'skel', Inf)
```



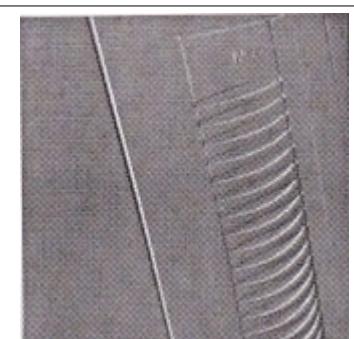
```
edge (x, 'canny', [0.4,0.5],1)
```



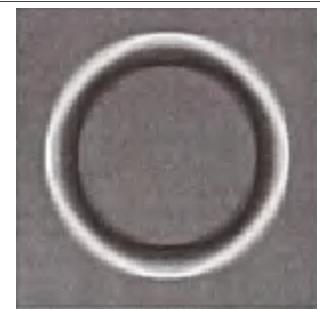
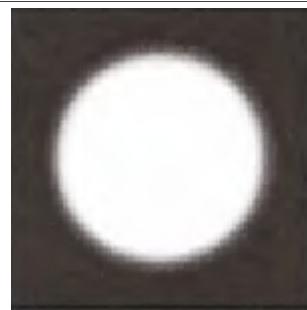
```
conv2 (x, [1 2 1;0 0 0;-1 -2 -1])
```



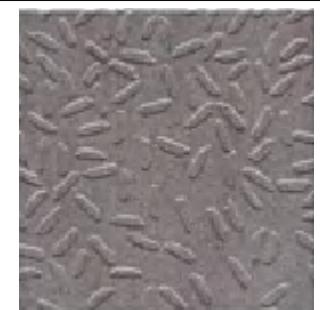
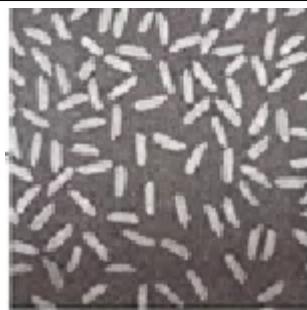
```
conv2 (x, [1 0 -1;2 0 -2;1 0 -1])
```



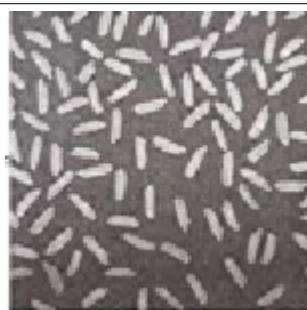
```
conv2(x, fspecial('laplacian'))
```



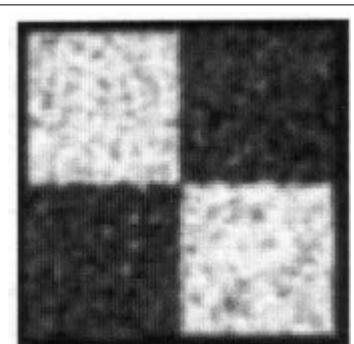
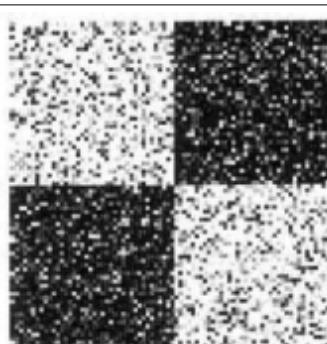
```
conv2(x, [1 2 1;0 0 0;-1 -2 -1])
```



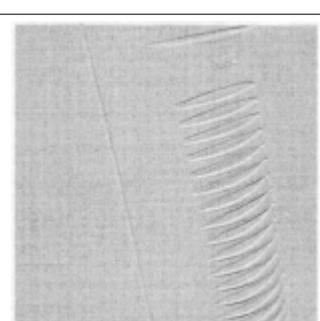
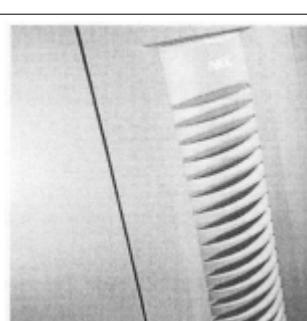
```
conv2(x, [1 0 1;2 0 -2;1 0 -1])
```



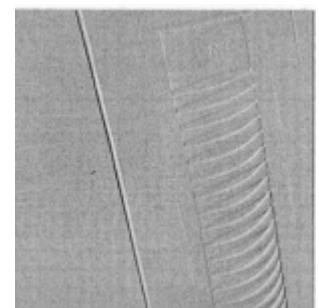
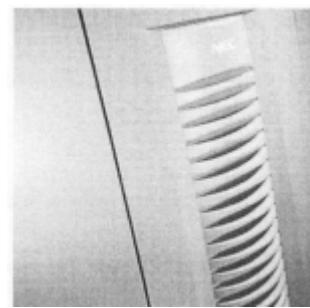
```
conv2 (X, fspecial('gaussian',  
[7 7],1))  
Gaussian erkennbar am schwarzen  
Rand.
```



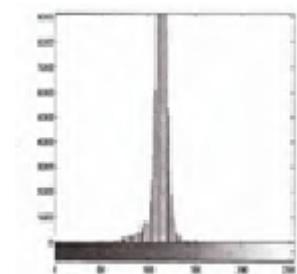
```
conv2(X, [1 2 1;0 0 0;-1 -2 -1])
```



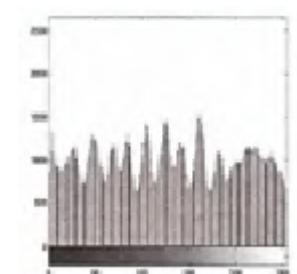
```
conv2(X, [1 0 -1;2 0 2;1 0 -1])
```



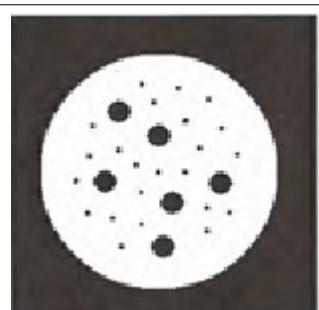
```
imhist(x)
```



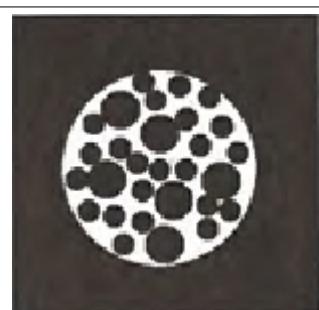
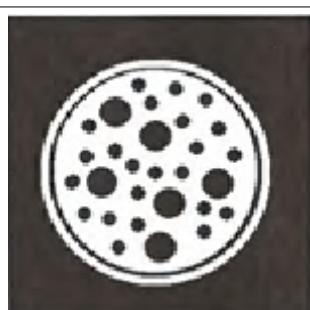
```
imhist(x)
```



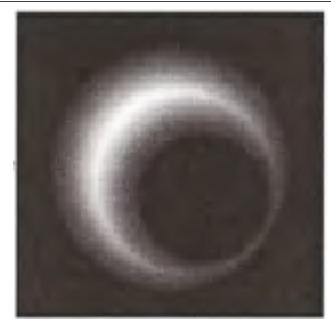
```
imdilate(x,strel('disk',5))
```



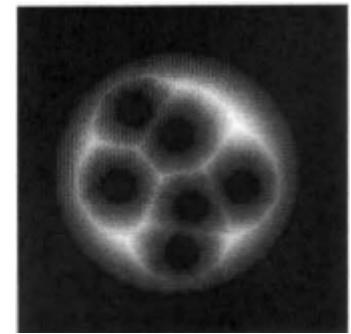
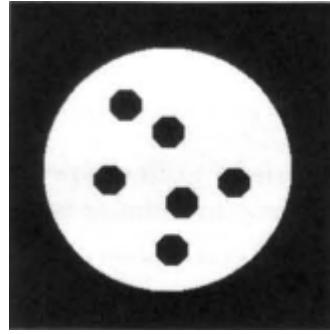
```
imerode(x,strel('disk',5))
```



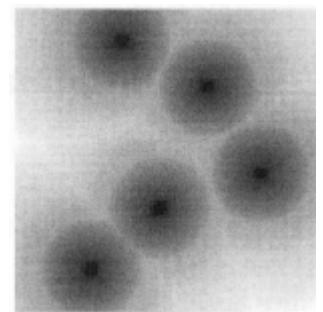
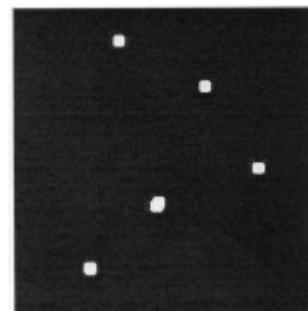
`bwdist(-x)`



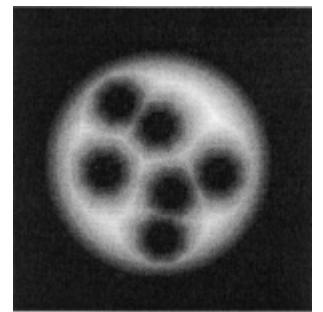
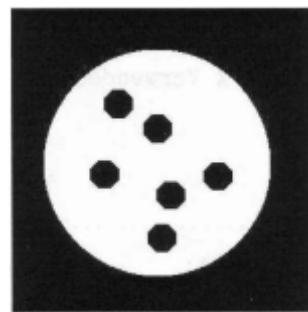
`bwdist(X)`
!!! Nicht ganz sicher



`bwdist(X)`



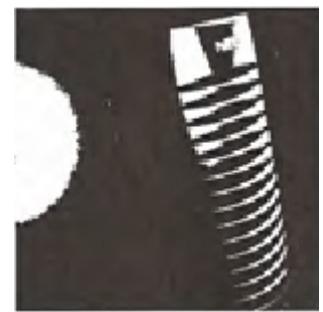
`bwdist(~X)`



`im2bw(x, 100/255)`

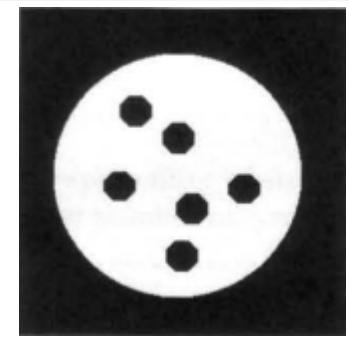
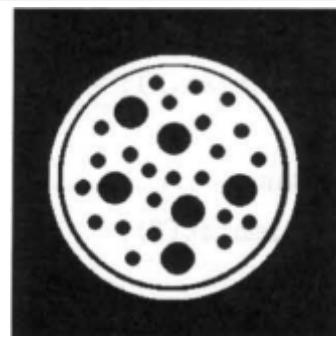


```
im2bw(x, 200/255)
```



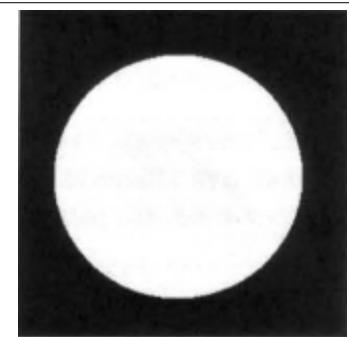
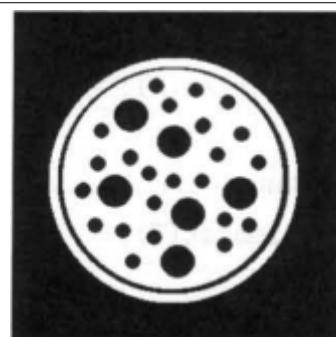
```
imclose(X, strel('disk', 11))
```

Beim Closing werden alle Bereiche des Binärbildes die '1' sind mit dem Closing-Element (in dem Fall ein 11px Kreis) "aufgeblasen" (Dilate) und dannach erodiert. Dadurch werden sich nah aneinander befindende Strukturen zusammengeführt. Deswegen sind die kleinen schwarzen "Inseln" und der schmale, schwarze Ring verschwunden.



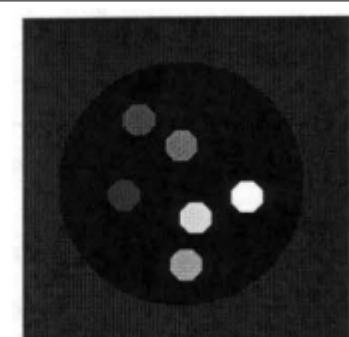
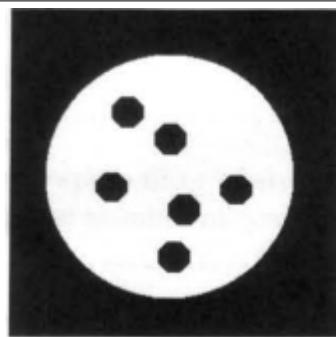
```
imclose(X, strel('disk', 30))
```

Diesmal wurde das Closing jedoch mit einem größeren Kreis durchgeführt. Dies hat zur Folge dass auch die größeren, schwarzen, "Inseln" in Weiß aufgegangen sind.

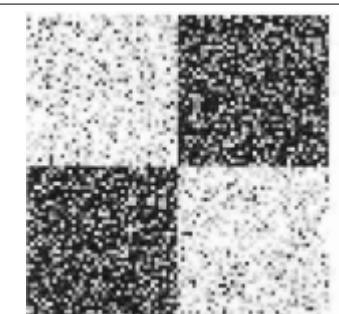


```
bwlabel(~X)
```

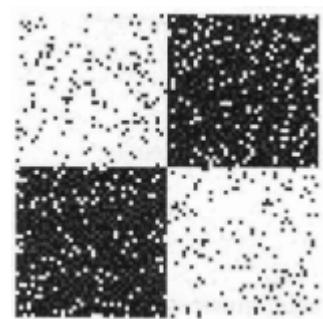
Label gibt jedem neuen Bereich eine neue/n Farbe/Grauwert.



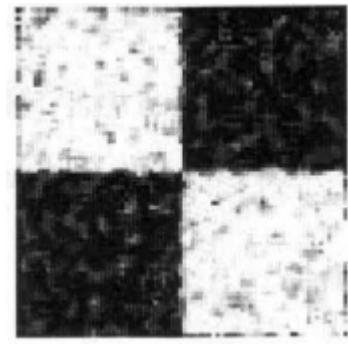
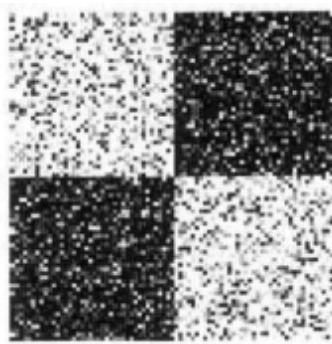
```
imnoise(X, 'gaussian', 0, 0.2)
```



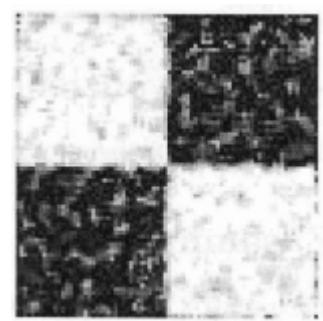
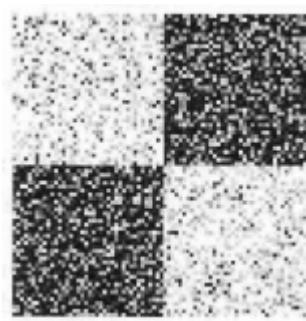
```
imnoise(X, 'salt & pepper', 0.2)
```



medfilt2(X)
Keine künstlich erzeugten Grauwerte in N, sondern nur bereits in W vorkommende. Außerdem ist nahezu der gesamte Salt&Pepper-Noise verschwunden.



```
medfilt2(X)
```



```
histeq(X)
```

Mit Matlab Bild T zu X versuchen!!!

