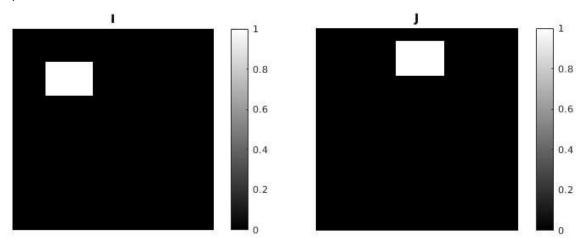
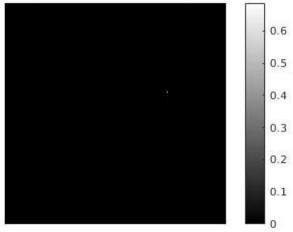
Q6)



Cross spectrum:-

Log(Fourier magnitude of the cross-power spectrum)

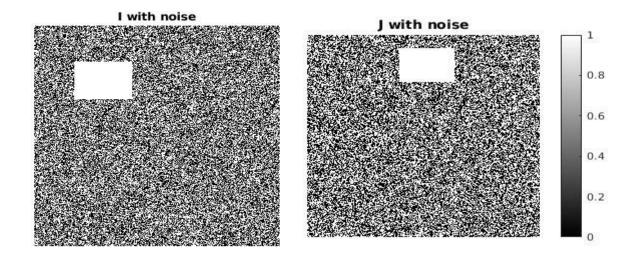


The maximum value is at [121,221]

Due to wraparound effect the maximum is observed at [121,221].

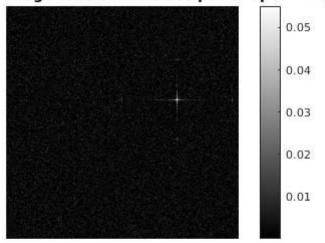
The translation is = [121-150, 221-150] = [-29,71] which is approximately the same as the translation applied.

With gaussian noise:-



Cross spectrum:-

Log(Fourier magnitude of the cross-power spectrum)



The maximum value is at [121,221]

Due to wraparound effect the maximum is observed at [121,221].

The translation is = [121-150, 221-150] = [-29,71] which is approximately the same as the translation applied.

If the images were of size (N^*N) the time required is of the order $O(N^2log(N))$.

For pixel wise comparison the order is $O(N^4)$. The time required is much more than what is taken by cross power spectrum.

For rotation angle:-

For rotation angle:-	
	Date 1
f_2 is geotated version of $f_1(x,y)$ in $f_2(x,y) = f_1(x) \cos x + \cos x$	id- worker on A
f2(x,y) = f1(x 6010 + 110 0	Company of
Takip Fourier transform,	00 + geosto)
F2 (E, y) = F1 (ELOSO + Msino, - Esin	00 + M (0+00)
Let Mi & M2 be magnitude of	
M2(E, n) = M2/2 coso + n sinoo , -	
Using polar coordinates,	
$M_{1}(\rho,0) = M_{2}(\rho,0-00)$	
(4,0) = 112 (4,000)	
Now again taking fownier to	ransform we got
Now, again taking forvier to $F(M_1(\rho, 0)) = e^{j2\pi(u \cdot 0)} F($	(M2(P,O))
Using cross power spectrum	r ,
Let FIMI) = F and F(M2):	=F'
Using cross power spectrum Let $F(M_1) = F$ and $F(M_2)$: $e^{i2\pi\theta} = F \cdot F \cdot F$	
IC BI	
Taking Inverse fourier troms impulse at (0,00)	form we get an
imphylle at (A An)	0
sompulse at (0,00)	