```
ue = imread('ex_log.tif');
% imshow(ue);
[r,c] = size(ue);
ue = double(ue);
% ueg = rgb2gray(ue);
sum =0;
m = mean(mean(ue));
for i=1:r
    for j=1:c
        sum = sum+ue(i,j,:);
        contrast = pow2( ue(i,j)-m,2);
    end
end

sum = sum/(r*c)

oe = imread('ex_power2.tif');
[r,c] = size(oe);
oe = double(oe);
sum = 0;
m = mean(mean((oe)));
m
for i=1:r
    for j=1:c
        sum=sum+oe(i,j,:);
        contrast = pow2( oe(i,j)-m,2);
    end
end
sum = sum/(r*c)
contrast
```

```
sum =

    2.0799


m =

  197.1243


sum =

  197.1243


contrast =

   79.5027
```

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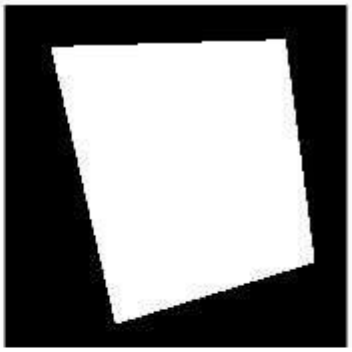
```
lenna = imread('lenna.png');
lg = rgb2gray(lenna);
bw = roipoly(lg);
bw = uint8(bw*255);
bo = uint8(255-bw);

final = bitand(lg,bw);
final_or = bitor(lg,bo);

subplot(2,2,1);
imshow(lg);
subplot(2,2,2);
imshow(bw);
subplot(2,2,3);
imshow(final);
subplot(2,2,4);
imshow(final_or);
%show bo also

%FOR RGB IMAGE
```



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```
lenna = imread('lenna.png');
[r,c,x] = size(lenna);

%column
for i=1:r
    k=1;
    for j=1:2:c
        half(i,k,:)=lenna(i,j,:);
        k=k+1;
    end
end

% row
k=1;
for i=1:2:r
    for j=1:c
        halfr(k,j,:)=lenna(i,j,:);
    end
    k=k+1;
end

imshow(lenna);
figure,imshow(half);
figure,imshow(halfr);
```

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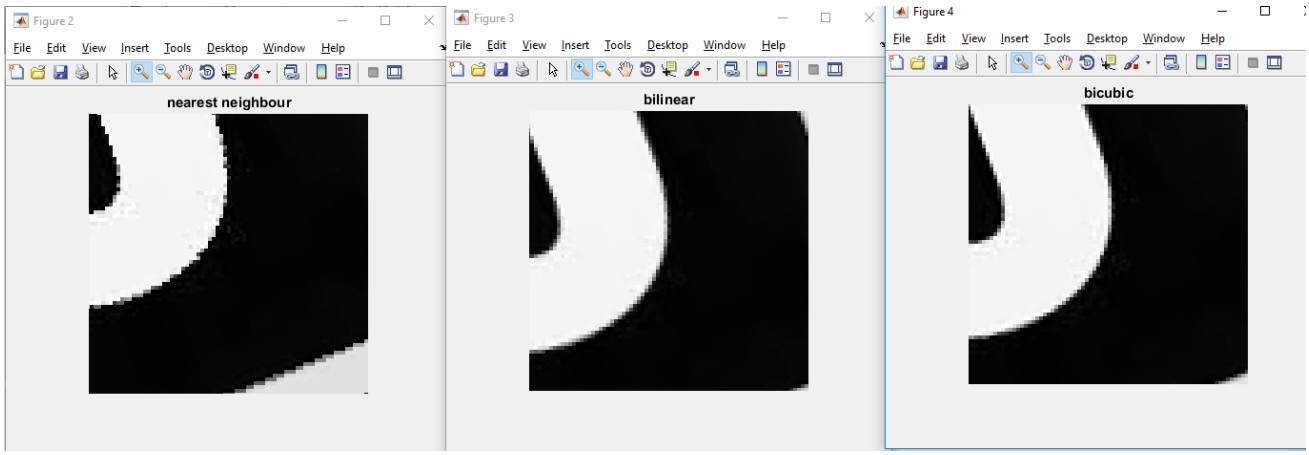
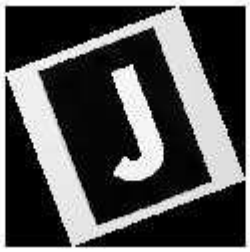
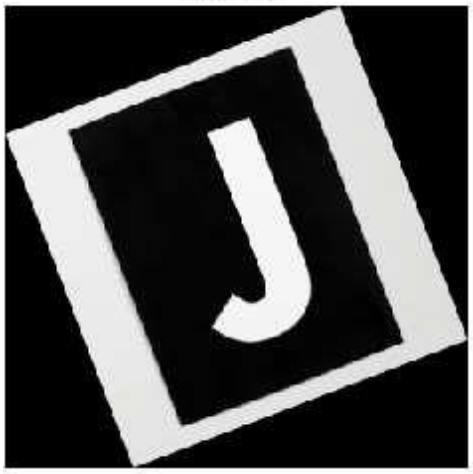
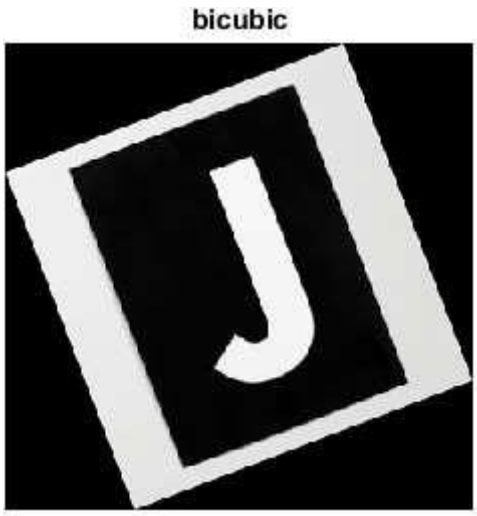
```
j = imread('j.jpg');
subplot(1,3,1);
imshow(j);
j1 = imrotate(j,21,'nearest','loose');
subplot(1,3,2);
imshow(j1);
j2 = imrotate(j,21,'nearest','crop');
subplot(1,3,3);
imshow(j2);

j2 = imrotate(j,21,'bilinear','loose');
figure,imshow(j2);
title('bilinear');

j3 = imrotate(j,21,'bicubic','loose');
figure,imshow(j3);
title('bicubic');
```





bilinear





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