Ex 1

```matlab
L=imread('santa.jpg');
figure,imshow(L);
L1=im2double(rgb2gray(L));
figure, imhist(L1);
ylabel('Number of pixels', 'FontSize',15,'FontName','Arial CE');
L2a=L1>0.6;
figure,imshow(L2a);
L2b=L1>0.75;
figure,imshow(L2b);
```

Ex 2

```matlab
L = imread('santa.jpg');
L1=im2double(rgb2gray(L));
figure, imshow(L1);
[x y] = ginput(1);
answer = inputdlg('Enter tolerance range');
thresh = L1(fix(y),fix(x))
tol = str2num(answer{1});
L2 = (L1<(thresh +tol))&(L1>(thresh-tol));
figure, imshow(L2);
```

Ex 3

```matlab
L = imread('cells2.jpg');
L1=im2double(rgb2gray(L));
imshow(L1);
[x y] = ginput(1);
answer = inputdlg('Enter tolerance range');
thresh = L1(fix(y),fix(x))
tol = str2num(answer{1});
L2 = (L1<( thresh +tol))&(L1>( thresh -tol));
figure;
imshow(L2);
```

Ex 4

```matlab
[L1a,map1a] = imread('kamen1.bmp');
L1a=ind2gray(L1a,map1a);
L1a=L1a(1:333,1:584);
[L1b,map1b] = imread('rock.bmp');
L1b=ind2gray(L1b,map1b);
figure;
L2a = L1a;
[w k] = size(L1a);
for i=1:k %przenikanie w pionie
 L2a(:,i)=L1b(:,i);
 imshow(L2a);
 pause(0.001);
```

```matlab
end
for i=1:w %przenikanie w poziomie
 L2a(i,:)=L1b(i,:);
 imshow(L2a);
 pause(0.001);
end
```

Ex 5

```matlab
[L1a,map1a] = imread('kamen1.bmp');
L1a=ind2gray(L1a,map1a);
figure; imshow(L1a);
L1a=L1a(1:333,1:584);
figure; imshow(L1a);
[L1b,map1b] = imread('rock.bmp');
L1b=ind2gray(L1b,map1b);
figure; imshow(L1b)
L2a = imabsdiff(L1b,L1a);
figure; imshow(mat2gray(L2a))
```

Ex 6

```matlab
[L1a,map1a] = imread('kamen1.bmp');
L1a=ind2gray(L1a,map1a);
figure; imshow(L1a);
L1a=L1a(1:350,1:500);
figure; imshow(L1a);
[L1b,map1b] = imread('kamen.bmp');
L1b=ind2gray(L1b,map1b);
figure; imshow(L1b)
L2a =bitand(L1b, L1a);
figure; imshow(L2a)
```