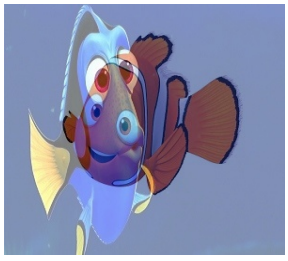
SOMA

```
im1 = imread("imagemA.jpg");
im2 = imread("imagemB.jpg");

soma1 = im1 + im2;// esse estoura
soma2 = (im1/2)+(im2/2); // esse é melhor para a visualização

imwrite(soma1, "s1.jpg");
imwrite(soma2, "s2.jpg");
```

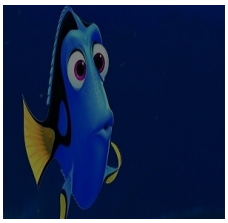
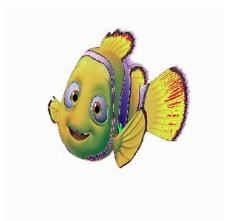
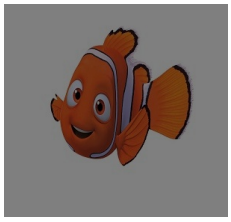

SUBTRAÇÃO

```
im1 = imread("imagemA.jpg");
im2 = imread("imagemB.jpg");

sub1 = im1 + im2;// esse estoura
sub2 = (im1/2)+(im2/2); // esse é melhor para a visualização

imwrite(sub1,"su1.jpg");
imwrite(sub2,"sub2.jpg");
```

MULTIPLICAÇÃO E DIVISÃO

```
im1 = imread("imagemA.jpg");
im2 = imread("imagemB.jpg");

multA = im1 * 2;
divA = (im1/2);
multB = im2 * 2;
divB = (im2/2);

imwrite(multA,"multA.jpg");
imwrite(divA,"divA.jpg");
imwrite(multB,"multB.jpg");
imwrite(divB,"divB.jpg");
```

HDR

```
im1 = imread("quarto1.jpg");
im2 = imread("quarto2.jpg");

hdr = im1/2+im2/2;

imwrite(hdr,"hdr.jpg");
```

TRANSLAÇÃO

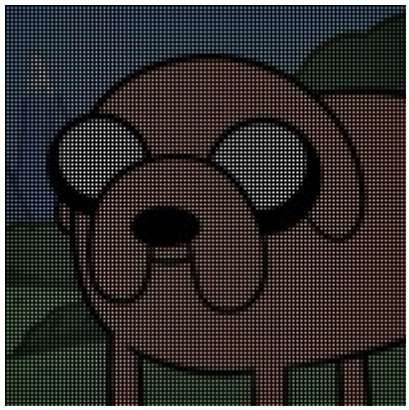
```
im1 = imread("jake.jpg");

[l c] = size(im1);

im2 = im1 - im1;

for x=1:l
    for y=1:c
        im2(y+30,x+30,1) =  im1(y,x,1) ;
        im2(y+30,x+30,2) =  im1(y,x,2) ;
        im2(y+30,x+30,3) =  im1(y,x,3) ;
    end
end

imwrite(im2,"translação.jpg");
```

ESPELHAMENTO

```
im1 = imread("jake.jpg");

[l c] = size(im1);

im2 = im1-im1;

for x=1:l
    for y=1:c
        im2(y,x,1) =  im1( l-y+1,x,1) ;
        im2(y,x,2) =  im1( l-y+1,x,2) ;
        im2(y,x,3) =  im1( l-y+1,x,3) ;
     end
end

imwrite(im2,"espelhamento.jpg");
```

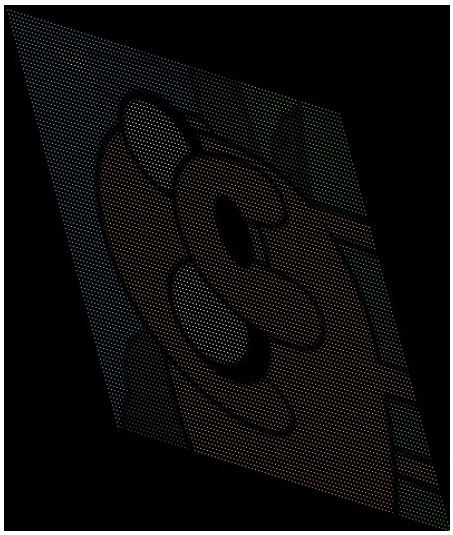
ESCALA

```
im1 = imread("jake.jpg");

[l c] = size(im1);

im2 = im1 - im1;

for y=1:l
    for x=1:c
        newX = 2*x;
        newY = 2*y;
        im2(newY,newX,1) =  im1( y,x,1) ;
        im2(newY,newX,2) =  im1( y,x,2) ;
        im2(newY,newX,3) =  im1( y,x,3) ;
    end
end

imwrite(im2,"escala.jpg");
```



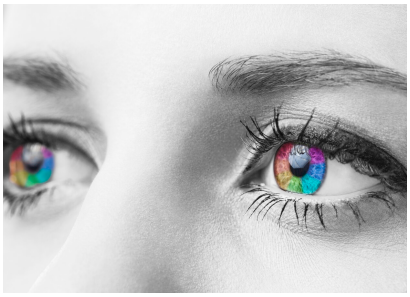
CISALHAMENTO

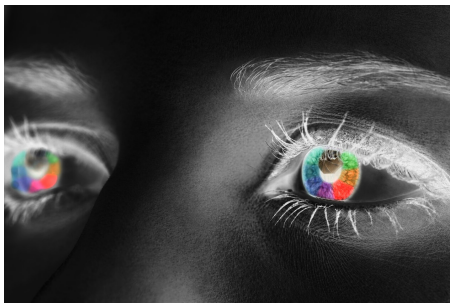
```
im1 = imread("jake.jpg");

[l c] = size(im1);

im2 = im1 -im1;

for x=1:l
    for y=1:c
        newX = 3*x;
        newY = 4*y;
        im2(x+newY,y+newX,1) = im1(x,y,1);
        im2(x+newY,y+newX,2) = im1(x,y,2);
        im2(x+newY,y+newX,3) = im1(x,y,3);
    end
end

imwrite(im2,"cisalhamento.jpg");
```

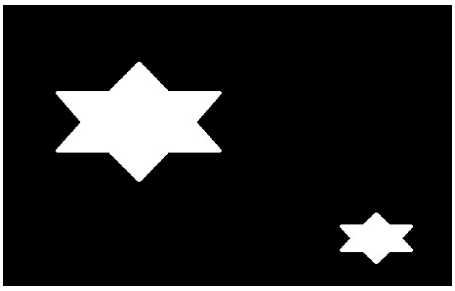


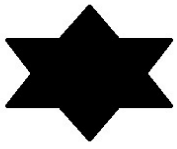
Não (NOT)

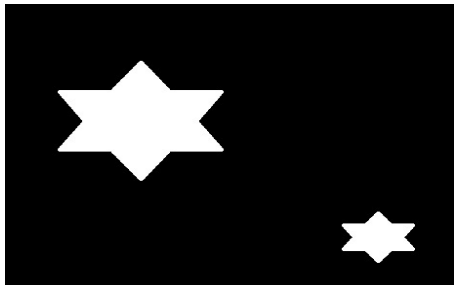
```
im_pretoBranco = imread("img1.jpg");
im_colorida = imread("lente-colorida.jpg");
im_NaoPretoBranco = im_pretoBranco;
im_NaoColorida = im_colorida;

[w_Preto h_Preto] = size(im_pretoBranco);
[w_Colorido h_Colorido] = size(im_colorida);

for w=1:w_Preto
    for h=1 :h_Preto
        im_NaoPretoBranco (w,h,1) = ~im_pretoBranco(w,h,1);
        im_NaoPretoBranco (w,h,2) = ~im_pretoBranco(w,h,2);
        im_NaoPretoBranco (w,h,3) = ~im_pretoBranco(w,h,3);
    end
end

for w=1:w_Colorido
    for h=1 :h_Colorido
        im_NaoColorida (w,h,1) = ~im_colorida(w,h,1);
        im_NaoColorida (w,h,2) = ~im_colorida(w,h,2);
        im_NaoColorida (w,h,3) = ~im_colorida(w,h,3);
    end
end

imwrite(im_NaoPretoBranco,"NaoPretoBranco.jpg");
imwrite(im_NaoColorida,"NaoColorida.jpg");
```

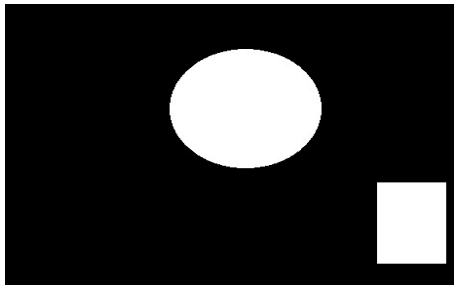




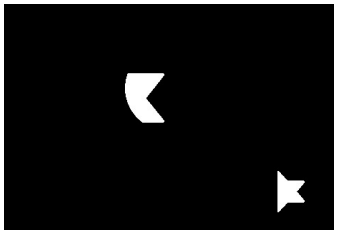






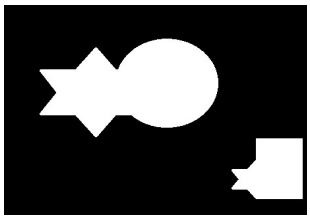


E (AND)



```
im_pretoBranco1= imread("img1.jpg");
im_pretoBranco2 = imread("img2.jpg");
im_ANDPretoBranco = im_pretoBranco1;

[w_Preto h_Preto] = size(im_pretoBranco1);

for w=1:w_Preto
    for h=1 :h_Preto
        im_ANDPretoBranco (w,h,1) = im_pretoBranco1(w,h,1) &
im_pretoBranco2(w,h,1);
        im_ANDPretoBranco (w,h,2) = im_pretoBranco1(w,h,2) &
im_pretoBranco2(w,h,2);
        im_ANDPretoBranco (w,h,3) = im_pretoBranco1(w,h,3) &
im_pretoBranco2(w,h,3);
    end
end

imwrite(im_ANDPretoBranco,"ANDPretoBranco.jpg");
```

OU (OR)



```
im_pretoBranco1= imread("img1.jpg");
im_pretoBranco2 = imread("img2.jpg");
im_ORPretoBranco = im_pretoBranco1;

[w_Preto h_Preto] = size(im_pretoBranco1);

for w=1:w_Preto
    for h=1 :h_Preto
        im_ORPretoBranco (w,h,1) = im_pretoBranco1(w,h,1) |
im_pretoBranco2(w,h,1);
        im_ORPretoBranco (w,h,2) = im_pretoBranco1(w,h,2) |
im_pretoBranco2(w,h,2);
        im_ORPretoBranco (w,h,3) = im_pretoBranco1(w,h,3) |
im_pretoBranco2(w,h,3);
    end
end

imwrite(im_ORPretoBranco,"ORPretoBranco.jpg");
```

OU EXCLUSIVO (XOR)

```
im_pretoBranco1= imread("img1.jpg");
im_pretoBranco2 = imread("img2.jpg");
im_XORPretoBranco = im_pretoBranco1;
[w_Preto h_Preto] = size(im_pretoBranco1);

function [Rim_XORPretoBranco]=myXOR(img1, img2)
        Rim_XORPretoBranco  =((~img1)&(img2))|((img1)& (~img2));
endfunction

for w=1:w_Preto
    for h=1 :h_Preto

im_XORPretoBranco(w,h,1)=myXOR(im_pretoBranco1(w,h,1),im_pretoBranco2(w,h,1));

im_XORPretoBranco(w,h,2)=myXOR(im_pretoBranco1(w,h,2),im_pretoBranco2(w,h,2));

im_XORPretoBranco(w,h,3)=myXOR(im_pretoBranco1(w,h,3),im_pretoBranco2(w,h,3));
    end
end

imwrite(im_XORPretoBranco,"XORPretoBranco.jpg");
```