

## Processamento Digital de Imagens

### Lista de Exercícios 3

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Gere o espectro de Fourier das imagens: “arara.png”, “barra1.png”, “barra2.png”, “barra3.png”, “barra4.png”, “teste.tif” e “img\_aluno”. Obs.: note que o espectro é igual para as barras 1, 2 e 4, que apenas variam de posição.

Imagem de entrada



Espectro de Fourier

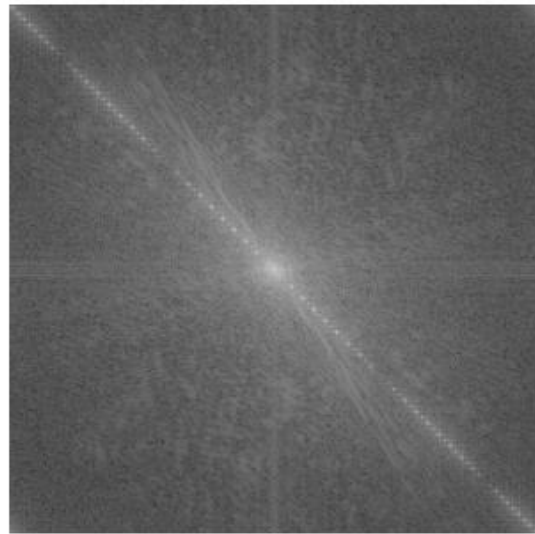
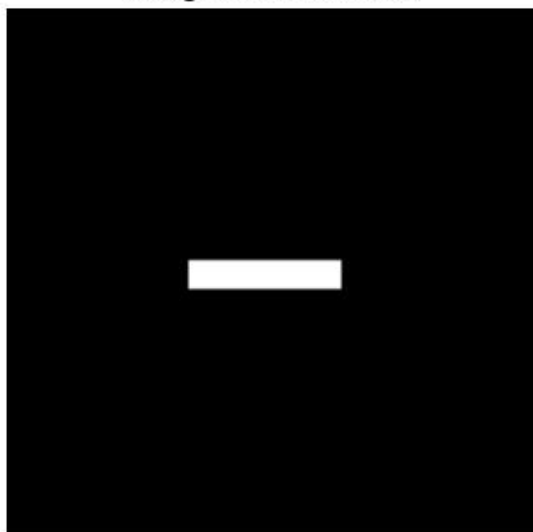


Imagem de entrada



Espectro de Fourier

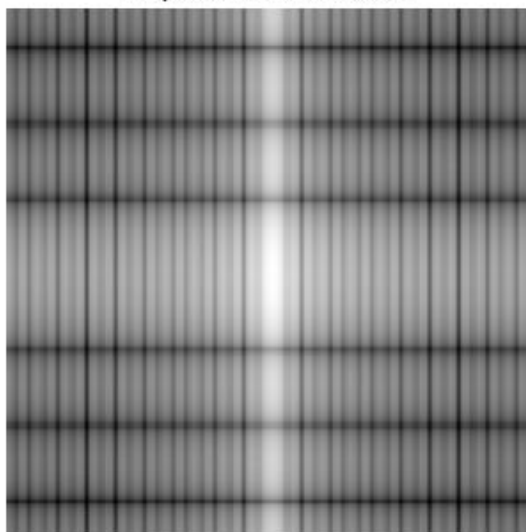


Imagem de entrada



Espectro de Fourier

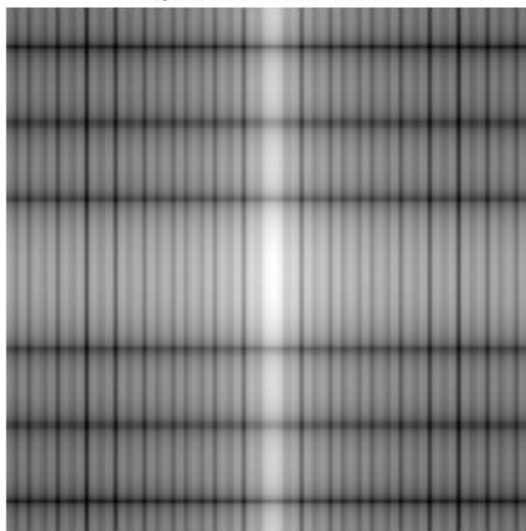
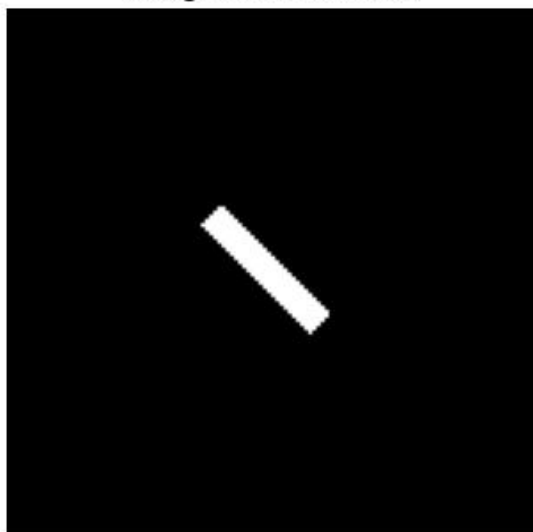


Imagem de entrada



Espectro de Fourier

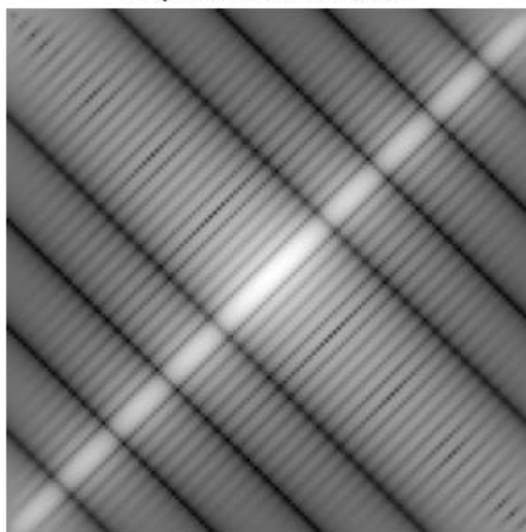


Imagem de entrada



Espectro de Fourier

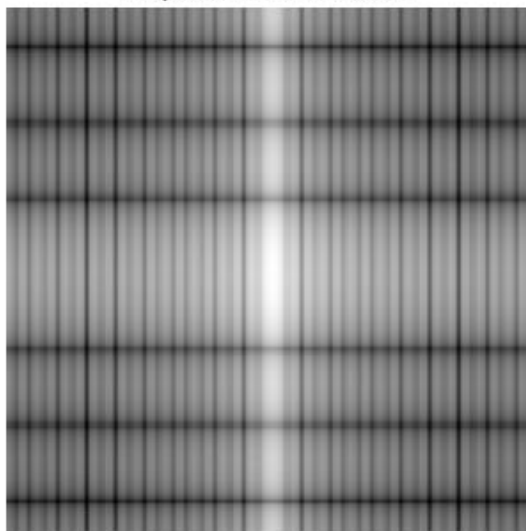


Imagem de entrada



Espectro de Fourier

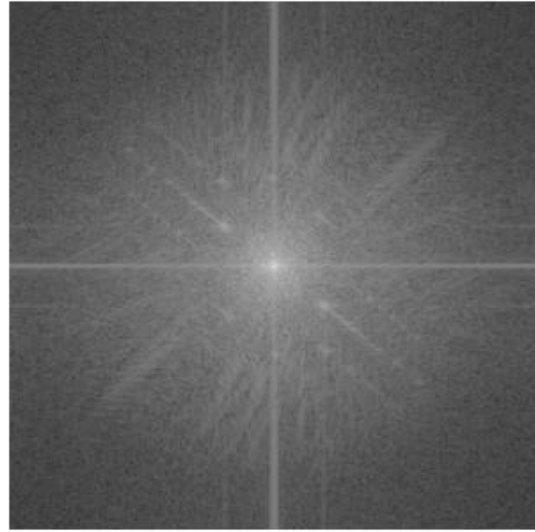
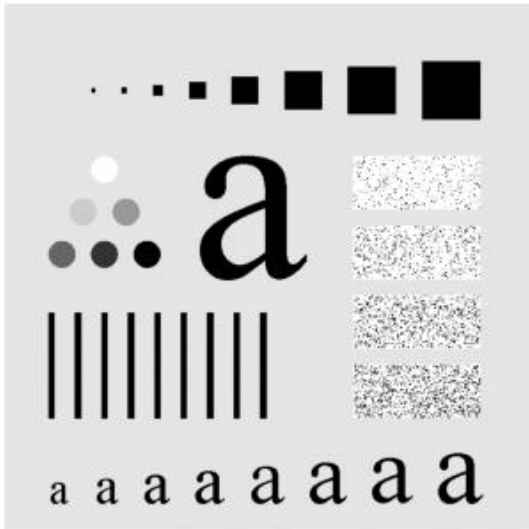
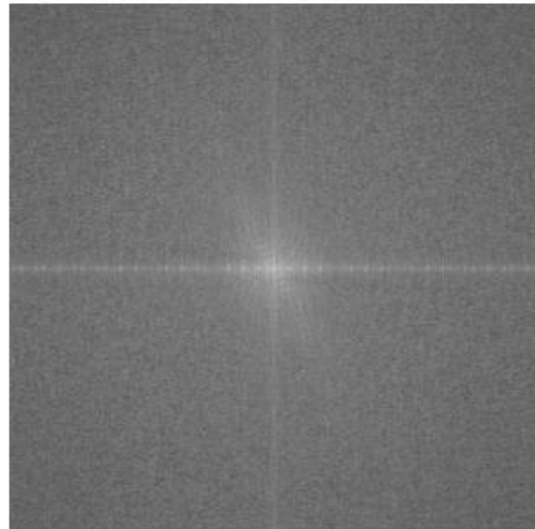


Imagem de entrada

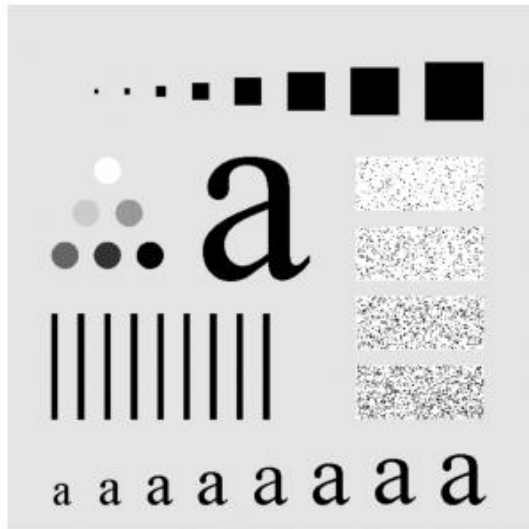


Espectro de Fourier



Aplique os filtros passa-baixa e passa-alta no domínio da frequência, utilizando função gaussiana, nas imagens: “teste.tif” e “img\_aluno”.

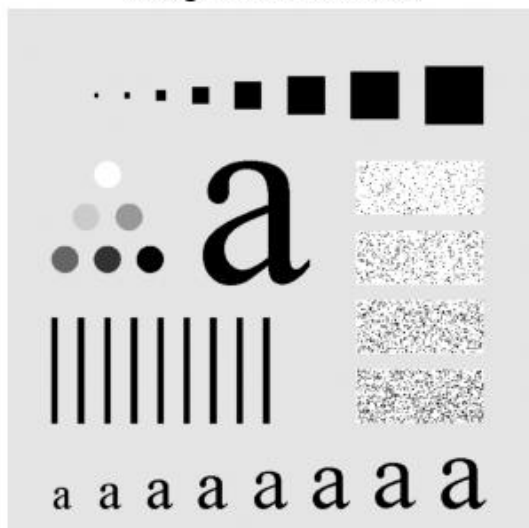
Imagem de entrada



Filtro passa-baixa



Imagem de entrada



Filtro passa-alta

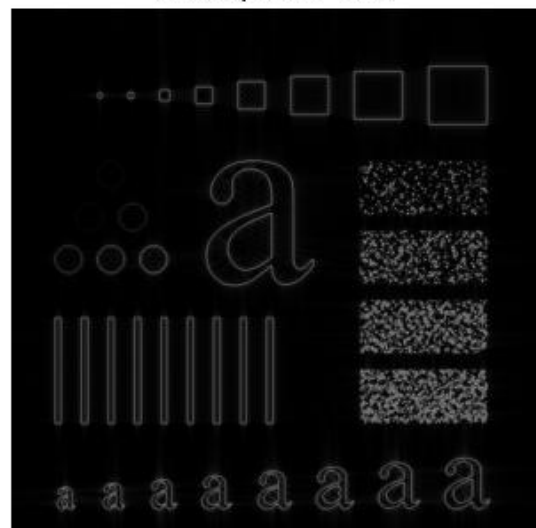


Imagem de entrada



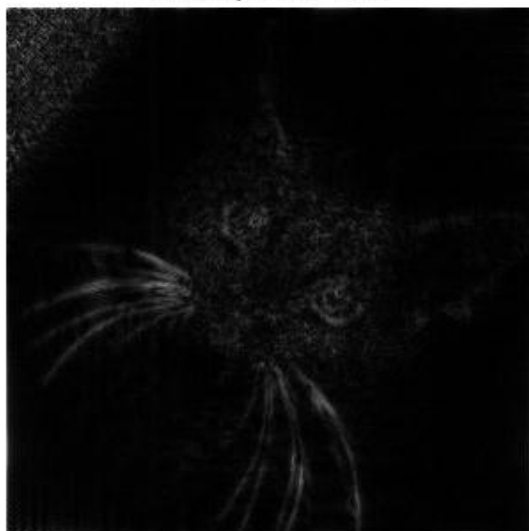
Filtro passa-baixa



Imagem de entrada



Filtro passa-alta



Aplique o filtro rejeita-banda, definido pela imagem “arara\_filtro.png”, na imagem “arara.png”.

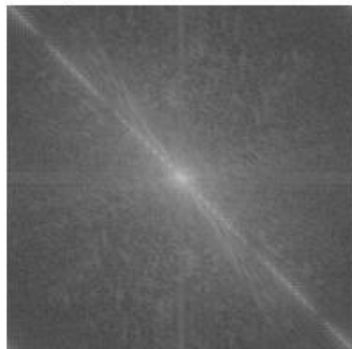
Imagem de entrada



Imagem filtrada



Espectro de Fourier

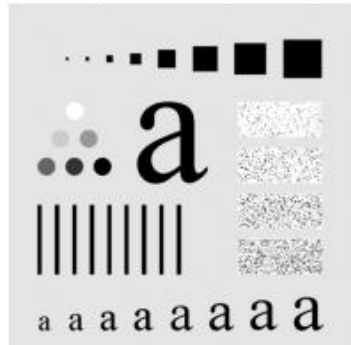


Filtro Rejeita-Banda



Desenvolva um algoritmo que gere os filtros passa-banda e rejeita-banda similares às figuras abaixo e aplique a filtragem no domínio da frequência com esses filtros nas imagens: “teste.tif” e “img\_aluno”.

Imagem de entrada



Espectro de Fourier

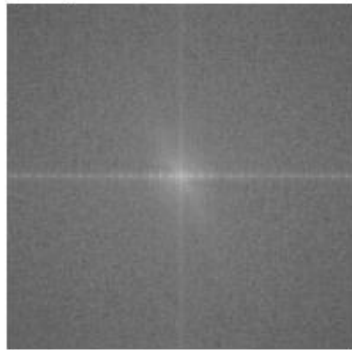
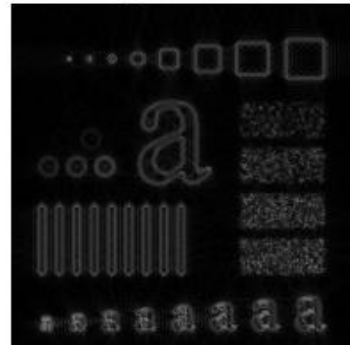


Imagem filtrada



Filtro Passa-Banda

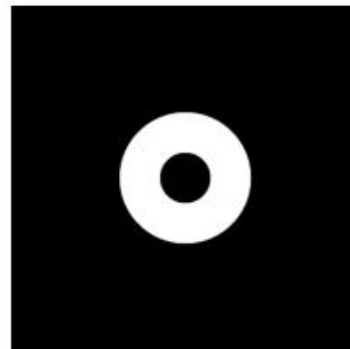
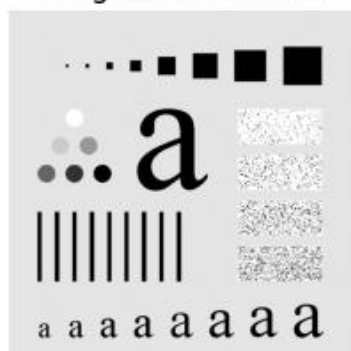




Imagem de entrada



Espectro de Fourier

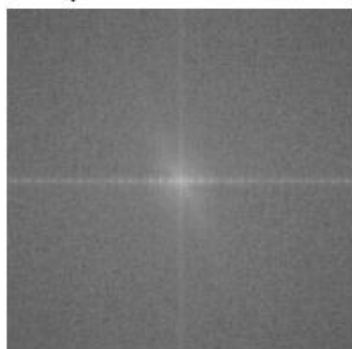
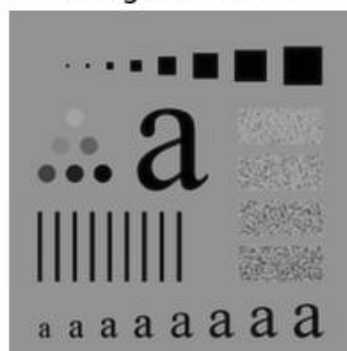


Imagem filtrada



Filtro Rejeita-Banda



Imagem de entrada



Espectro de Fourier

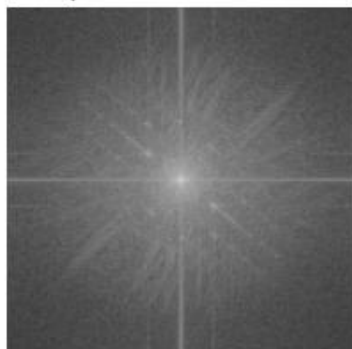
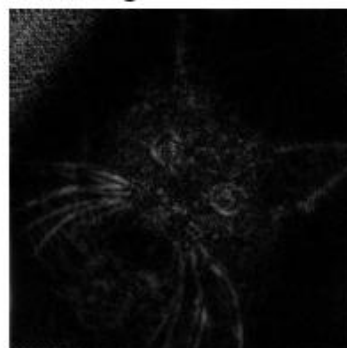


Imagem filtrada



Filtro Passa-Banda

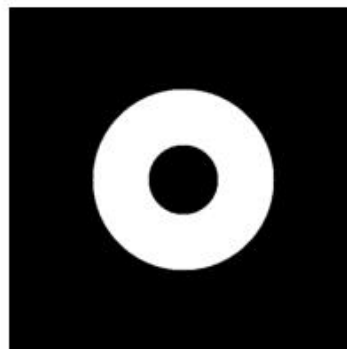


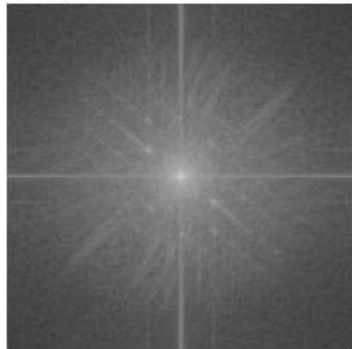
Imagem de entrada



Imagem filtrada



Espectro de Fourier



Filtro Rejeita-Banda

