CS 111 Quiz #3: Instructions

- 10 questions
- Each question displayed for **one minute only**
- Record your responses for each question using your clickers/Reef app
- Record your responses when polling starts for that question
- If you miss a question, you will not receive any credit for it

Question #1

Convolution in time-domain is equivalent to what operation in frequency domain?

A. **Multiplication**

B. Convolution

C. Addition

D. None of the above

Question #2

The frequency response of a box filter in spatial domain is
A. Box
B. **Sinc**
C. Gaussian
D. Comb

Question #3

The spatial function corresponding to a gaussian in frequency domain is

A. Box
B. Sinc
C. **Gaussian**
D. Comb

Question #4

The frequency response of a comb function in spatial domain is a comb function. If the density of the comb in spatial domain increases, the density of the comb in frequency domain:

A. Increases
B. **Decreases**
C. Remains the same

Question #5

What type of filtering is represented by the frequency responses on the right?

A. Low-pass filter

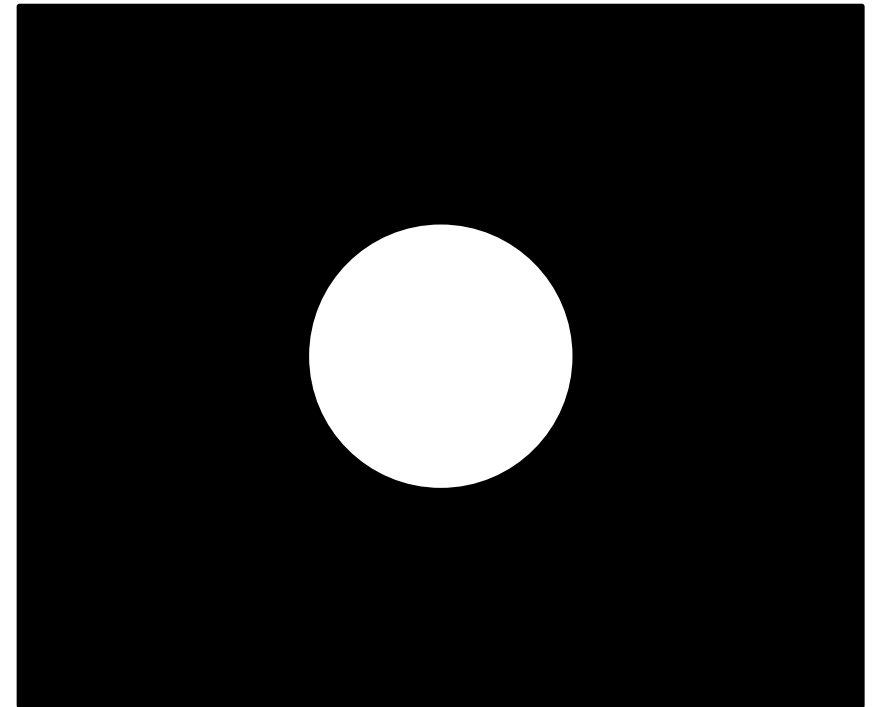B. High-pass filter

C. Band-pass filter
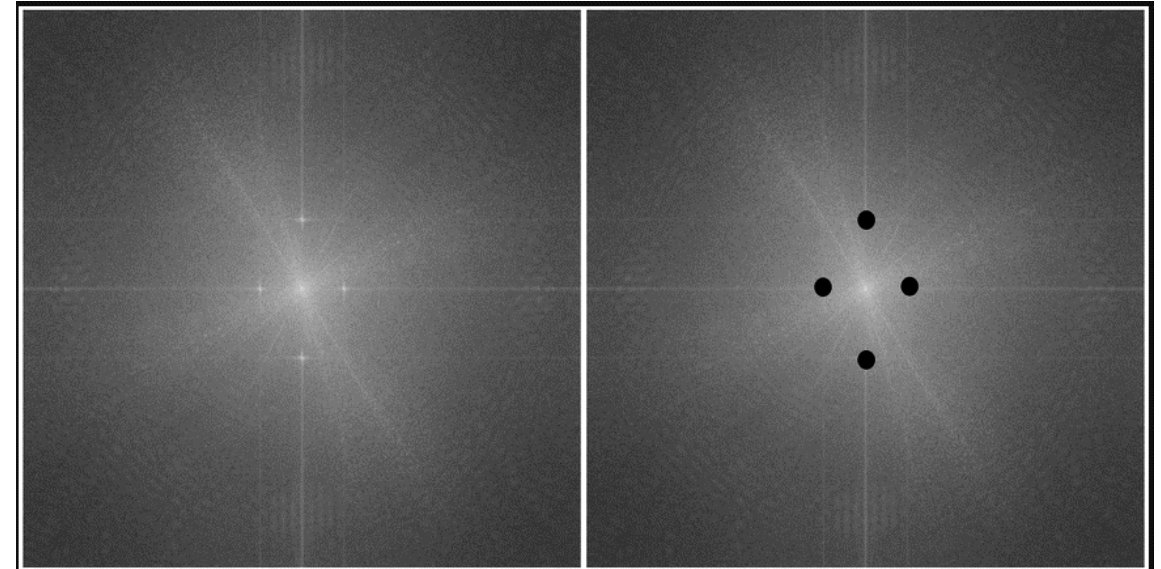
D. **Notch filter**

Frequency response of original image

Frequency response of filtered image

Question #6

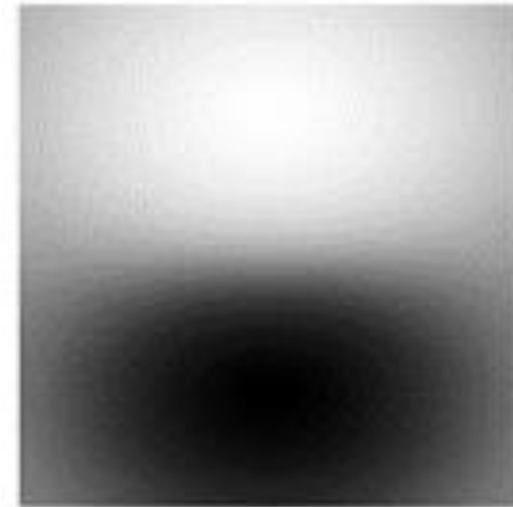The figure is the frequency response of which type of filter?

A. **Low-pass filter**

B. High-pass filter

C. Band-pass filter

D. Notch filter

Question #7

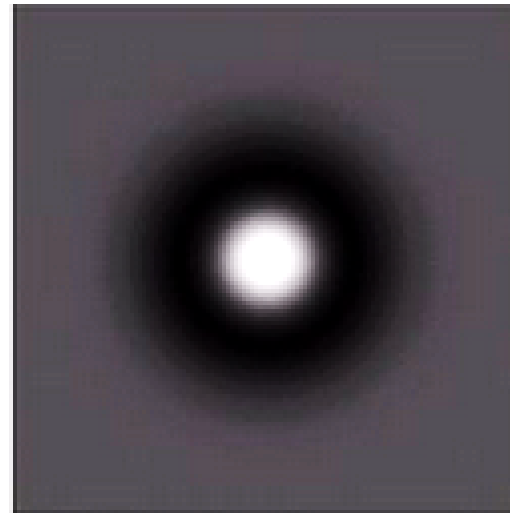Convolving the following filter in spatial domain with an image provides the following

A. Gradient in x direction

B. **Gradient in y direction**

C. Curvature

Question #8

The following filter in spatial domain represents

A. Gaussian kernel

B. **Laplacian of Gaussian kernel**

C. Laplacian Kernel

D. Gradient Kernel

Question #9

Consider amplitude modulation of an audio wave of frequency 0-500Hz. In order to avoid aliasing during reception, the minimum difference between two carrier frequencies should be

A. 250 Hz

B. 500 Hz

C. **1000 Hz**

Question #10

We would like search parabolas of the form $(x-h)^2 = 4p(y-k)$ in an edge image. The dimension of the Hough space is

A. 1
B. 2
C. **3**