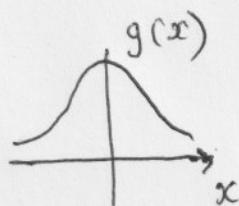
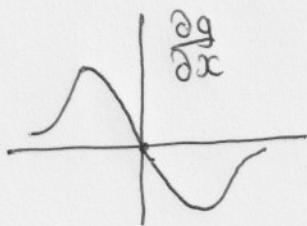


8.1

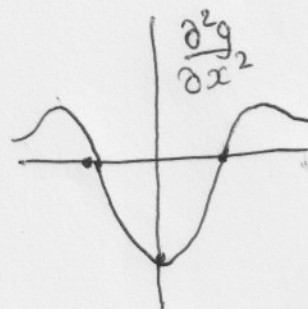
In 1D Laplacian =  $\frac{\partial^2 f}{\partial x^2}$ , in 2D  $L = \frac{\partial^2 f}{\partial x^2} + \frac{\partial^2 f}{\partial y^2}$



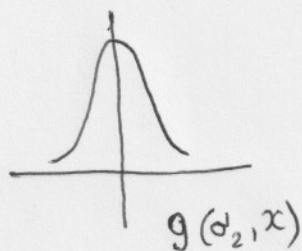
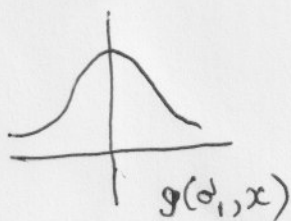
$g(x)$



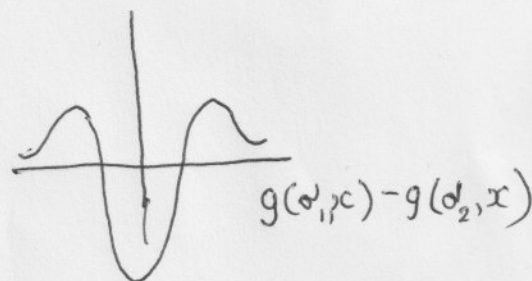
$g(x) * [-1 \ 1]$



$g(x) * [1 \ -2 \ 1]$

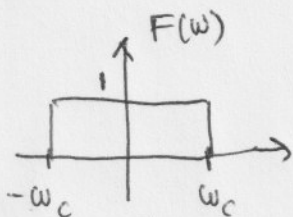


$$\sigma_1 > \sigma_2$$



It can be shown  $\frac{\partial^2 g}{\partial x^2} = \frac{1}{\sigma^2} \frac{\partial g}{\partial \sigma}$

Exact LPF low pass filter



$\Leftrightarrow$

