

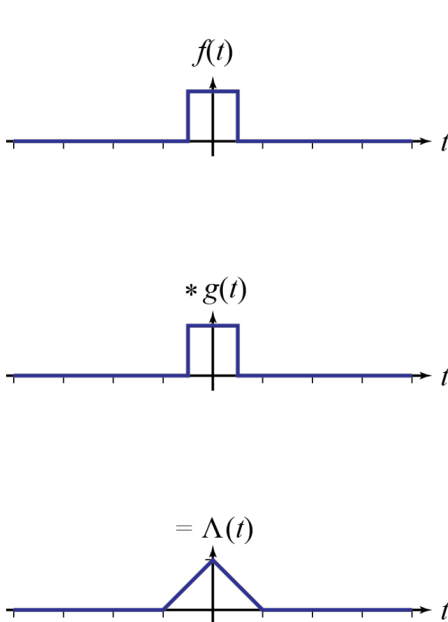
Ex: The examples shown below (read vertically) illustrate the additive nature of time shifts for convolution:

$$f(t-a) * g(t-b) = [f(t) * g(t)] \Big|_{t=t-(a+b)}$$

That is, the convolution of two functions is time shifted by the sum of the time shifts of the functions.

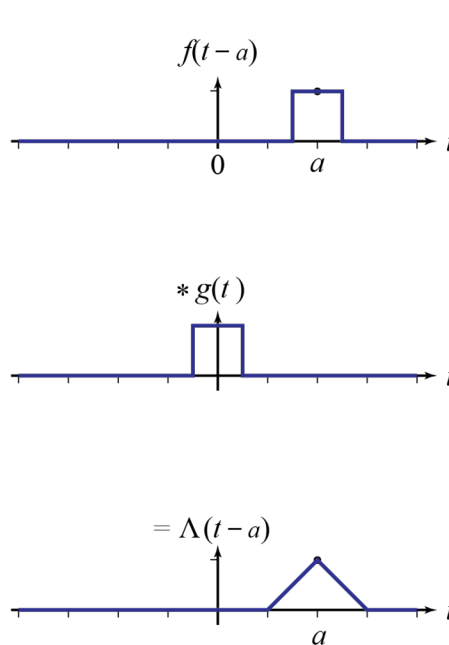
This identity allows us to convolve first and then time-shift.

Ex 1:



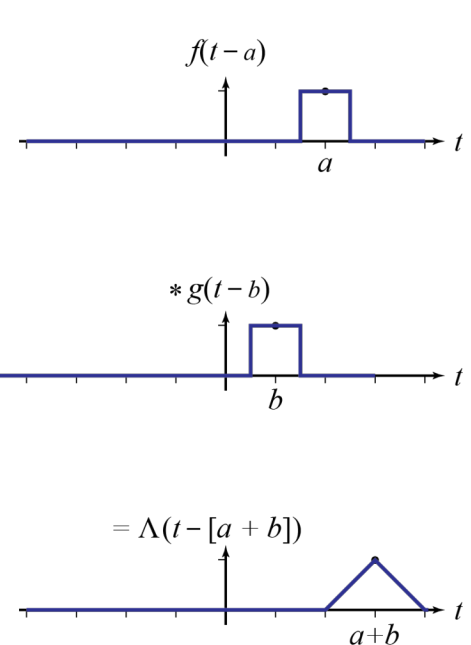
Ex 1: Convolution with no time shifts

Ex 2:



Ex 2: Convolution with one function time shifted

Ex 3:



Ex 3: Convolution with both functions time shifted