Sheet 4

1.   Use direct integration, find the expression for:

a) $y(t) = u(t) * u(t)$

b) $y(t) = e^{-at} u(t) * e^{-bt} u(t)$

c) $y(t) = tu(t) * u(t)$.
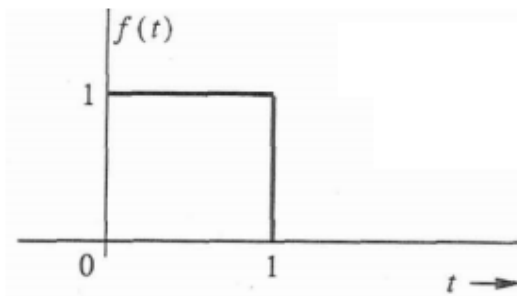
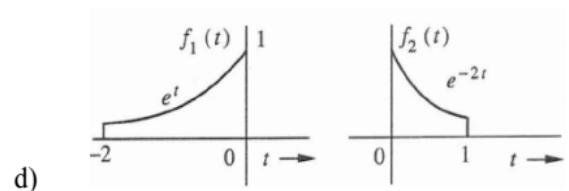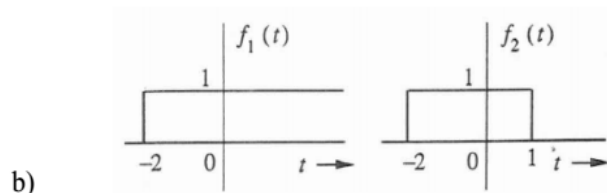2.   Use direct integration, find:

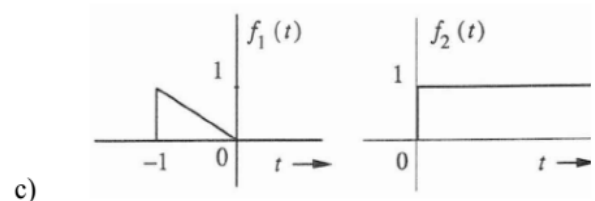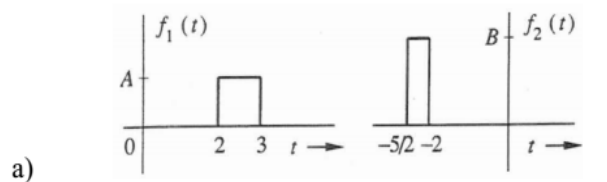a) $y(t) = \sin t \, u(t) * u(t)$

b) $y(t) = \cos t \, u(t) * u(t)$.

3.   By apply the shift property of convolution, find the system's response given the input as shown in figure and the impulse response as :

$h(t) = e^{-t} u(t)$

4.   Find and sketch the convolution integral for the pairs of functions shown as follow:

a)

b)

c)

d)

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