# EE 3054 Quiz 3. Fall 2011

continuous-time signals, systems.

① Given $f(t) = \delta(t) - 2\delta(t-1) + \delta(t-2)$

$g(t) = t\,u(t)$

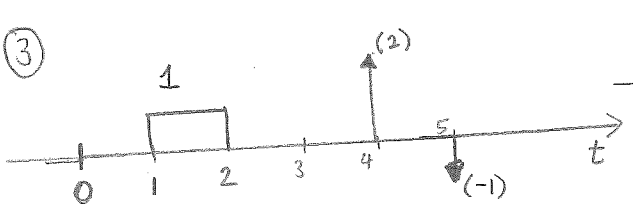
define $x(t) = f(t) \cdot g(t)$. Accurately sketch $x(t)$.

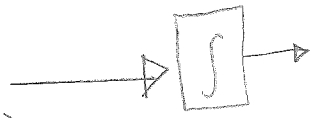
② An LTI system has impulse response $h(t) = t\,u(t)$.

Sketch the output signal produced by input signal

$x(t) = \delta(t) - 2\delta(t-1) + \delta(t-2)$

③



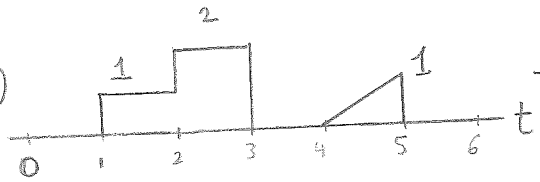



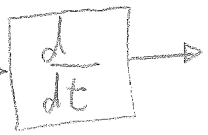

Sketch the output

The integrator is: $y(t) = \int_{-\infty}^{t} x(\tau)\,d\tau$

④ Same as ③ by system is defined as $y(t) = \int_{t-1}^{t} x(\tau)\,d\tau$

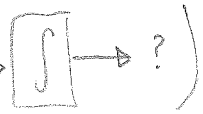
⑤




sketch the output signal

⑥ $x(t) = e^{t}\,u(-t)$. Sketch the output signal when $x(t)$ is the input to:

ⓐ integrator ( 

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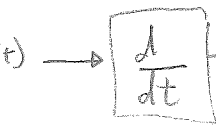
ⓑ differentiator ( 

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