

CARLETON UNIVERSITY

Department of Systems and Computer Engineering

SYSC 5608 Wireless Communications Systems Engineering

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QUIZ 2

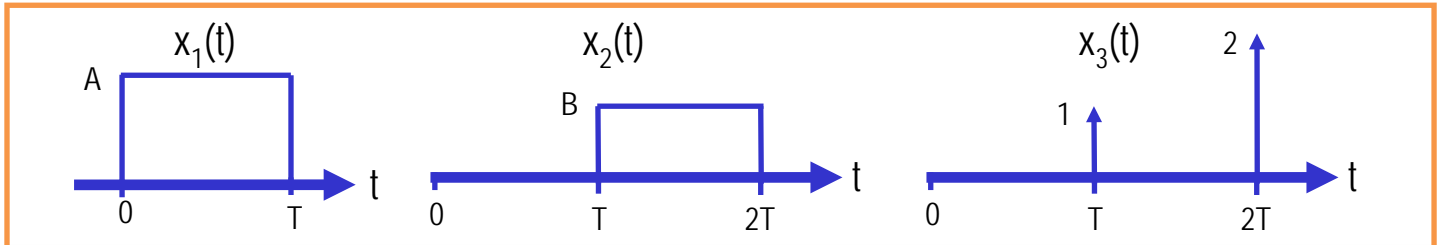
17 January 2017

Name:

Student #:

E-mail:

Q1. Convolution: $y(t) = x_1(t) * x_2(t)$. Sketch $y(t)$. $z(t) = x_2(t) * x_3(t)$. Sketch $z(t)$.



Q2. Consider an LTI channel with impulse response $h(t)$. The input and output of the channel are denoted by $x(t)$ and $y(t)$, respectively. The corresponding Fourier Transforms are $H(f)$, $X(f)$, and $Y(f)$, respectively. Write the output in terms of the input and channel

- in time domain,
- in frequency domain.

If the input to this LTI system is a random process, $X(t)$, with a power spectral density (PSD) of $S_X(f)$,

- write $S_Y(f)$, the PSD for the output process $Y(t)$.