

**CARLETON UNIVERSITY**

**Department of Systems and Computer Engineering**

**SYSC 5608 Wireless Communications Systems Engineering**

**Winter 2018**

**Professor H. Yanikomeroglu**

**QUIZ 1**

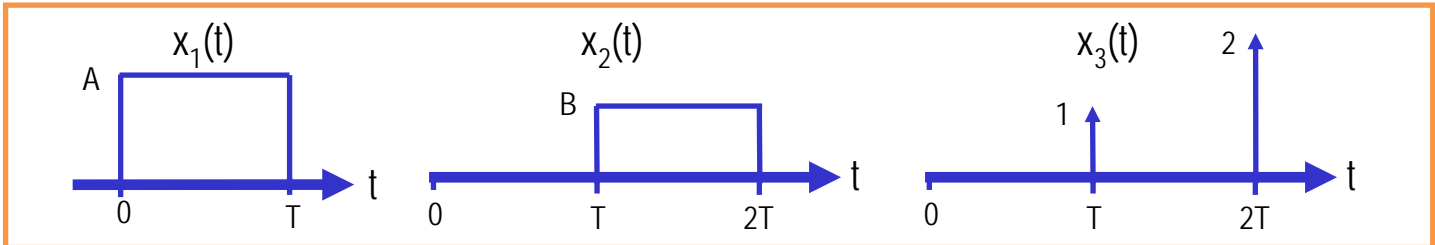
**11 January 2018**

**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.** Sketch the signal constellation for 16 QAM.

**Q3.**  $X$  is uniform random variable taking values in the range  $[0, 4]$ . Draw the PDF of  $X$ . Draw the CDF of  $X$ . Find the variance of  $X$ . Find  $\text{Prob}(2 < X < 3)$ . Find  $\text{Prob}(X=3)$ .