Name: Student number:	Grader's name: Grader's student number:	Marks: /15 Revised:

Department of Electronic and Telecommunication Engineering, University of Moratuwa, Sri Lanka

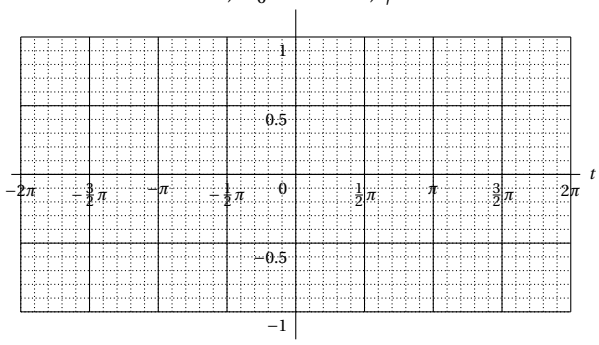
EN1060 Signals and Systems—Quiz 01

August 29, 2017

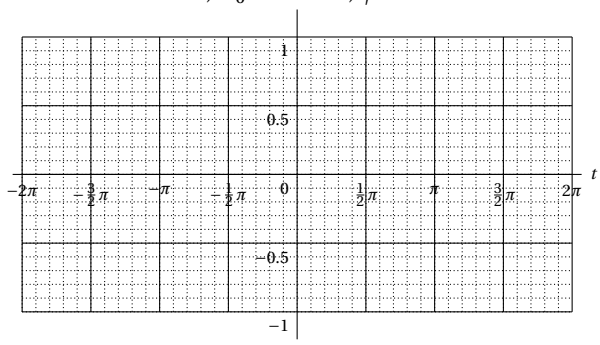
Instructions: Answer **all** the questions in the given space. This is an open-book quiz. Time: 15 minutes.

Q1. Plot $x(t) = A\cos(\omega_0 t + \phi)$ where [**2**]

$A = 1, \omega_0 = 1\,\text{rad/s}, \phi = 0$

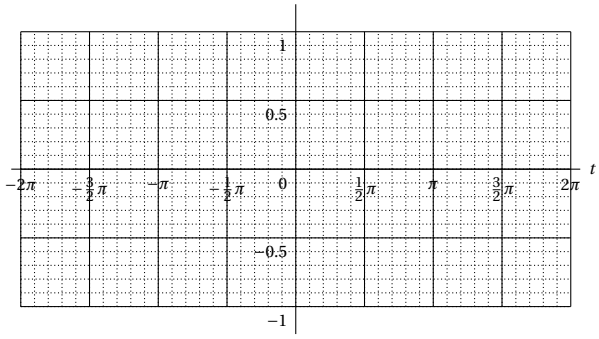


$A = 1, \omega_0 = 1\,\text{rad/s}, \phi = -\pi/2$

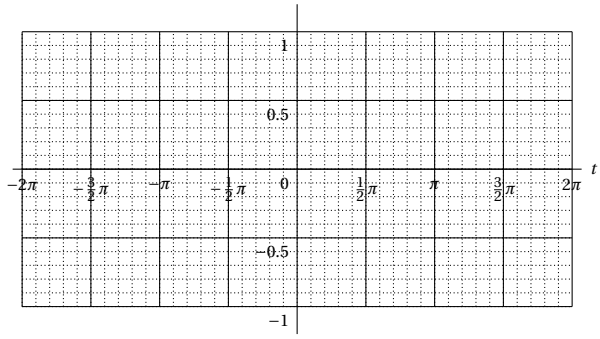


Q2. Plot $x(t) = A\sin(\omega_0 t + \phi)$ where [**2**]

$A = 1, \omega_0 = 2\,\text{rad/s}, \phi = 0$

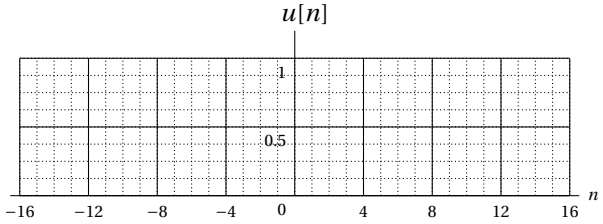


$A = 1, \omega_0 = 2\,\text{rad/s}, \phi = -\pi/2$

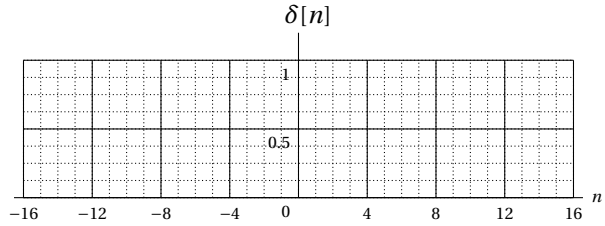


Q3. Plot $x[n] = u[n]$, and $x[n] = \delta[n]$. [**1**]

$u[n]$

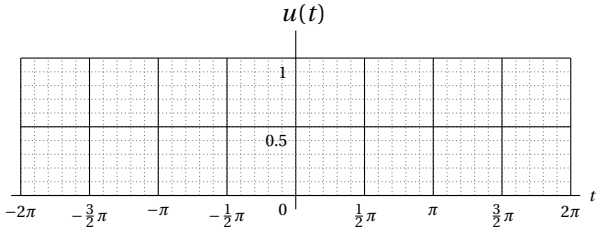


$\delta[n]$

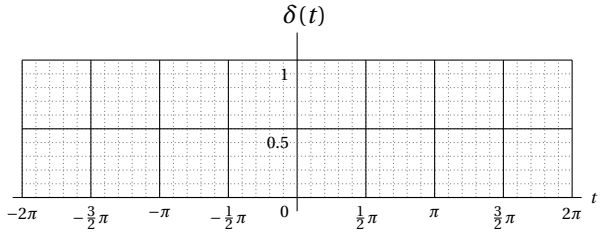


Q4. Plot $x(t) = u(t)$, and $x(t) = \delta(t)$. [**1**]

$u(t)$

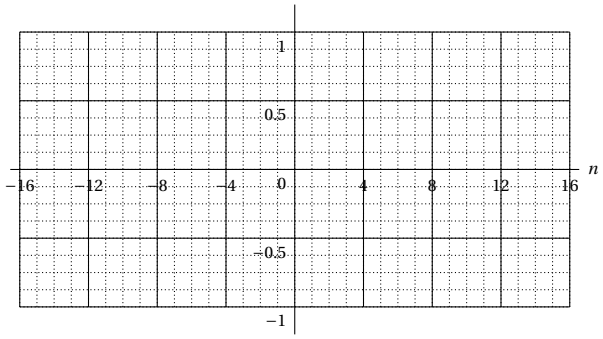


$\delta(t)$

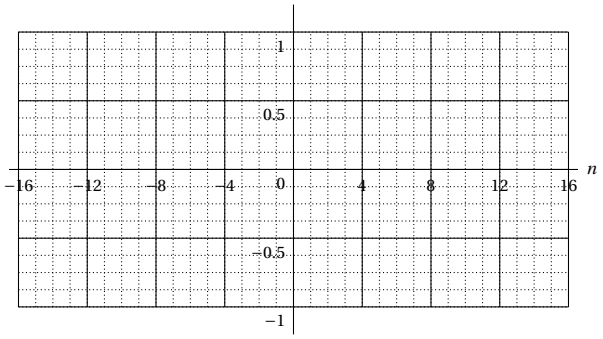


Q5. Plot $x[n] = A\cos(\omega_0 n + \phi)$ where [2]

$A = 1, \omega_0 = \pi/8$ rad/s, $\phi = 0$

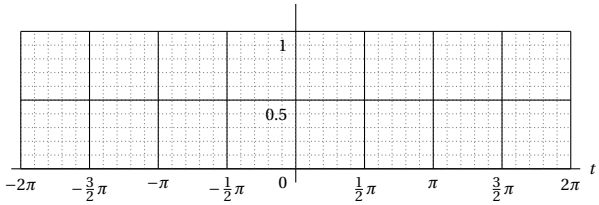


$A = 1, \omega_0 = \pi/8$ rad/s, $\phi = -\pi/2$

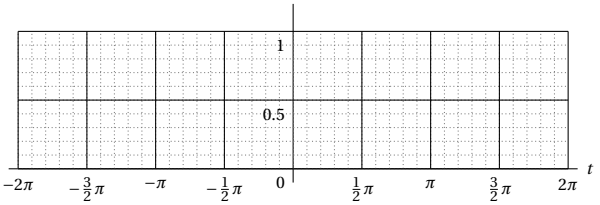


Q6. Plot $x(t) = Ce^{at}$ where [2]

$C = 0.15, a = -0.3$

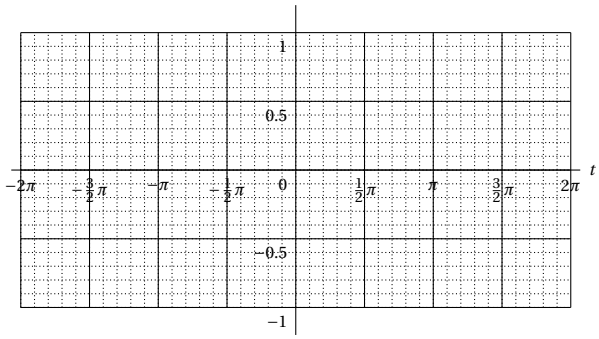


$C = 0.15, a = 0.3$

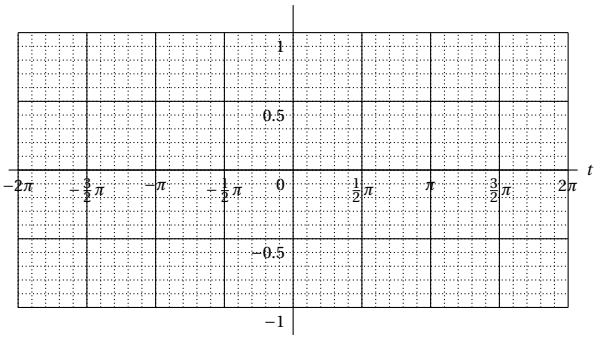


Q7. Plot the real part of $x(t) = Ce^{at}$ where $C = |C|e^{j\theta}$ and $a = r + j\omega_0$. [2]

$|C| = 0.15, \theta = 0, \omega_0 = 2$ rad/s, $r = 0.3$

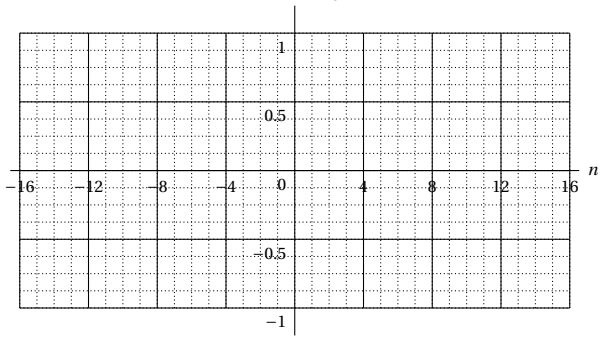


$|C| = 0.15, \theta = 0, \omega_0 = 2$ rad/s, $r = -0.3$



Q8. Plot the real part of $x[n] = C\alpha^n$ where $C = |C|e^{j\theta}$ and $\alpha = |\alpha|e^{j\omega_0}$. [3]

$|C| = 0.15, \alpha = 0.9, \omega_0 = 2\pi/16, \theta = 0$



$|C| = 0.15, \alpha = 1.9, \omega_0 = 2\pi/16, \theta = 0$