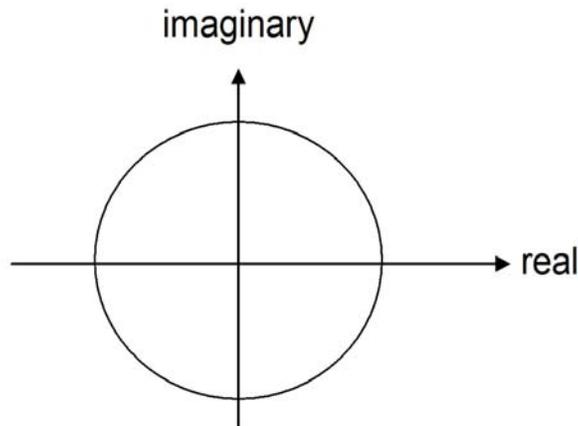


Name: _____

EE322 Fall 2008 Quiz 06

1. On the plot of the real/imaginary plane below, plot the following points. Label the points when you plot them. Note that the unit circle is drawn on the plot.

- a. 1
- b. -1
- c. j
- d. $-j$
- e. $e^{j\frac{\pi}{4}}$
- f. $e^{-j\frac{3\pi}{4}}$



For the following two questions, make sure your answer does NOT have a j in any denominator.

2. Write $\cos(2\pi 15t)$ as a sum of complex exponentials.

3. Write $-2 \sin(40\pi t)$ as a sum of complex exponentials.

Given: $x(t) = 3 \cos(2\pi 500t)$,

3. What is the fundamental frequency of this signal?
4. What is the continuous-time Fourier series Harmonic function $X[k]$. Write your answer in terms of delta functions.
5. Plot the magnitude and phase of $X[k]$ below.

$|X[k]|$



$\angle X[k]$



Given: $x(t) = -3 \cos(2\pi 500t)$,

6. Plot the magnitude and phase of $X[k]$ below.

$|X[k]|$



$\angle X[k]$



Bonus: Which two countries fought in the Falklands war? (you must name both).