EECS20n, Quiz 3, 3/17/00

The quiz will take 15 minutes. Do your calculations on the sheet.

Please print your name here:

Last Name: ____________________ First: ____________________ Lab time: ____________________

1. Consider each of the functions \( x: \text{Ints} \rightarrow \text{Comps} \) given below Is it periodic? If so, what is the period?
   
   (a) \( \forall n \in \text{Ints}, \quad x(n) = e^{i(\omega n + a)}, \text{ where } \omega = 3\pi \text{ and } a = \pi. \)

   (b) \( \forall n \in \text{Ints}, \quad x(n) = e^{n(i\omega + a)}, \text{ where } \omega = 3\pi \text{ and } a = \pi. \)

2. Use Euler’s relation to prove that \( \forall \theta \in \text{Reals}, \quad \cos^2(\theta) + \sin^2(\theta) = 1. \)