

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

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

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