MECH 6325 HW 1 Ind. $\theta_1, \theta_2 = U[0, 2\pi]$

15)

b) $R_x(\tau) = 2\pi \cos(-\omega_0 \tau)$

$$S_x(\omega) = 2\pi^2 [\delta(\omega - \omega_0) + \delta(\omega + \omega_0)]$$

c)

$$A[x(t)] = \lim_{T \to \infty} \frac{1}{2T} \int_{-T}^{T} \cos(\omega_0 t + \theta_1) \cos(\omega_0 t + \theta_2) dt$$

$$A[x(t)] = \frac{\cos(\theta_1 - \theta_2)}{2} \neq E[x(t)]$$

Not ergodic