

EECS 360
Homework #6

1. Section 3.7 Participation Activities
 - 3.7.1: Frequency response function and output from sinusoidal input.
 - 3.7.2: Time-domain response and frequency response pairs
 - 3.7.3: Is this system sinusoidal response LTI (Linear Time Invariant)?
2. Challenge activity
 - 3.7.1: LTI sinusoidal response.
3. Exercise 3.7.1
4. Exercise 3.7.2
5. Exercise 3.7.3
6. Exercise 3.7.4
7. Exercise 3.7.8
8. Exercise 3.7.11
9. For $h(t) = u(t)e^{-\alpha t}$
 - a. Find $H(\omega)$.
 - b. Put $H(\omega)$ in the form of $H(\omega) = R(\omega) + jI(\omega)$ where $R(\omega)$ and $I(\omega)$ are real functions.
 - c. Put $H(\omega)$ in the form of $H(\omega) = A(\omega)e^{j\theta(\omega)}$ where $A(\omega)$ and $\theta(\omega)$ are real functions.
 - d. For $\alpha=0.1$ plot $|H(\omega)|$, $|H(\omega)|^2$, $20\text{Log}(|H(\omega)|)$ and $\theta(\omega)$.