

# 6.003: Signals and Systems

## CT Frequency Response and Bode Plots

*October 22, 2009*

## Mid-term Examination #2

---

Wednesday, October 28, 7:30-9:30pm, Walker Memorial.

No recitations on the day of the exam.

Coverage: cumulative with more emphasis on recent material  
lectures 1-12  
homeworks 1-7

Homework 7 includes practice problems for mid-term 2.  
It will not be collected or graded. Solutions will be posted.

Closed book: 2 pages of notes ( $8\frac{1}{2} \times 11$  inches; front and back).

Designed as 1-hour exam; two hours to complete.

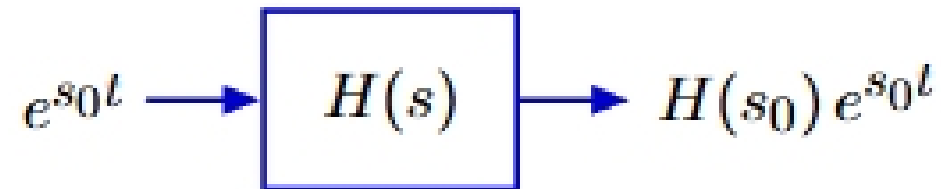
Review sessions Monday 5-6pm and 8-9pm in 32-044.

Conflict? Contact [freeman@mit.edu](mailto:freeman@mit.edu) by Friday, October 23, 5pm.

## Last Time

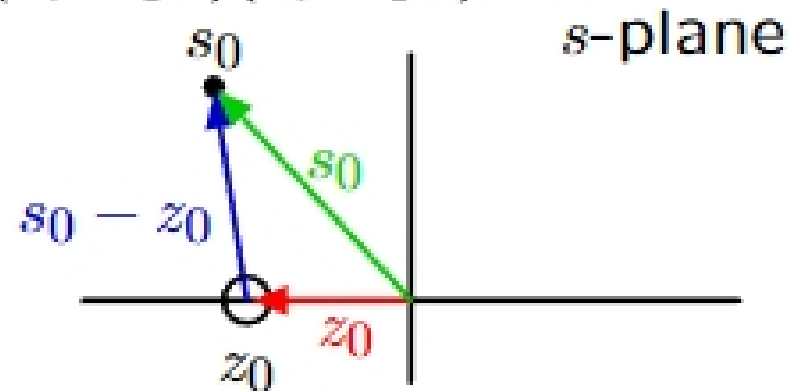
---

Complex exponentials are eigenfunctions of LTI systems.



$H(s_0)$  can be determined graphically using vectorial analysis.

$$H(s_0) = K \frac{(s_0 - z_0)(s_0 - z_1)(s_0 - z_2) \cdots}{(s_0 - p_0)(s_0 - p_1)(s_0 - p_2) \cdots}$$



Response of an LTI system to an eternal cosine is an eternal cosine: same frequency, but scaled and shifted.

