

IF YOU MISSED THE ORGAN DEMONSTRATION

Quiz #19 (*Counts Double*)

Due: April 20, 2012

Physics 1320

Music & Physics

Prof. Tunks & Olness

In place of the organ recital/demonstration, please do the following.

Choose a large well known campus performance room

(Perkins Chapel, Bob Hope Auditorium, O'Donnel Hall, etc.,).

Your mission is to make an accurate acoustical assessment of the room.

Include the following items.

- Compute the total volume of the room.
- Compute the total surface area of the room.
- Itemize the types of wall/floor/ceiling coverings, and compute the effect to these items.
- Compute the reverberation time of the room for $f=1000\text{Hz}$.
- Based on this value, estimate the reverberation time of the room for $f=100\text{Hz}$ and $f=10,000\text{Hz}$. Comment on differences.
- Evaluate the room for acoustical problems. Identify potential problems such as hi/lo frequency loss, echos, intimacy, etc.
- Include other comments or observations about the design of the room.