

*Lecture 10 -- Emitter Follower Amplifiers and Multistage Amplifiers*

Draw an emitter follower and list two common uses of the amplifier.

What are  $R_{in}$ ,  $R_{out}$  and  $A_v$  of an emitter follower?

Draw a two port model for an amplifier which uses our amplifier parameters, compare it to a general 2-port Z parameter model

Draw the small signal model of a multi-stage amplifier by using general 2-port amplifier models. Include a source resistance and a load resistance.

What is the total gain of a multi-stage amplifier?

Why is a voltage gain,  $a_v$ , expressed in decibels as  $20 \cdot \log(a_v)$  while a power gain,  $A_p$ , is expressed in decibels as  $10 \cdot \log(A_p)$ ?

How many decibels correspond to voltage gains of 10, 100,  $\frac{1}{2}$  and  $\frac{1}{4}$ ?