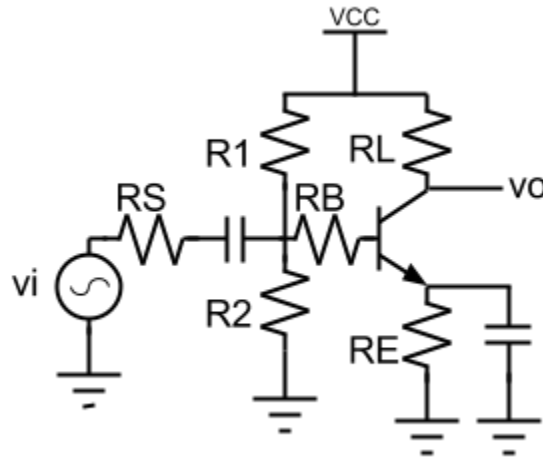


Lecture 7, Common Emitter Amplifiers  
E151/3 F17 – Matthew Spencer



1. The above circuit is a common emitter amplifier with a practical biasing scheme. As is typical with small signal models in this portion of the class, you may assume that we are operating in the mid-band and the capacitors are short circuits compared to the resistors in the small signal model. Note that the source resistance  $R_S$  is part of the driving voltage source, and not part of the amplifier. i.e.: the input port of the amplifier is between the base and ground.

(a) Find  $R_{in}$  for this circuit.

(b) Find  $R_{out}$  for this circuit.

(c) Find  $A_v$  for this circuit.