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.