Special Problem 4.6-3

The inductor and capacitors in the circuit below are unfathomably large.

I have completed the DC analysis (so you don’t have to)—I determined that $V_{GS} = 4.0$ V, and CHECKED that the MOSFET is in saturation.

1. Now you determine and carefully draw the simplified small-signal circuit (be complete, clear, and precise!).

2. Now analyze your small-signal circuit and determine the small-signal voltage gain ($A_v = \frac{v_o}{v_i}$) of the amplifier below.