1. For the amplifier circuit answer the following questions. Assume $\beta = 100$, $V_{th} = 25\text{mV}$, and $V_{BE} = 0.7\text{V}$ for an ON transistor.

a) **Calculate** the DC collector, base, and emitter voltages.

\[ V_C = \quad V_B = \quad V_E = \quad \]

b) **Calculate** the transistor small-signal quantities shown below.

\[ g_m = \quad r_\pi = \quad \]

c) Draw the small-signal equivalent circuit for the amplifier.