Problem 1. Neamen 6.21 (2nd ed: 4.8)

Problem 2. Neamen 6.42 (2nd ed: 4.40)

Problem 3:
(a) Draw the small signal equivalent circuit of an NPN common collector (emitter follower) amplifier, with emitter resistor $R_E$. Express the dependent current source in terms of $\beta$ and $i_b$.

(b) Apply a test voltage source, $V_t$, to the input of the transistor, with current $i_t$. Derive equations relating $V_t$ and $i_t$ to circuit parameters $R_E$, and $\beta$. Find the input resistance to the base as $r_t = \frac{V_t}{i_t}$.

Problem 4. Neamen 3.61 (2nd ed: 5.53)