Problem 1

Derive the equation for capacitor RMS Ripple Current for a Buck-Boost converter.

Problem 2

Design a Buck-Boost Regulator with the following specs:

\[ V_b = -20V \]
\[ P_{out} = 50W \]
\[ \Delta V_b = 60mV \text{ max} \]
\[ 12V \leq V_{in} \leq 15V \]

Turn in:

- PSpice simulations showing \( V_b \) and \( I_L \) at full load
- Math code solution