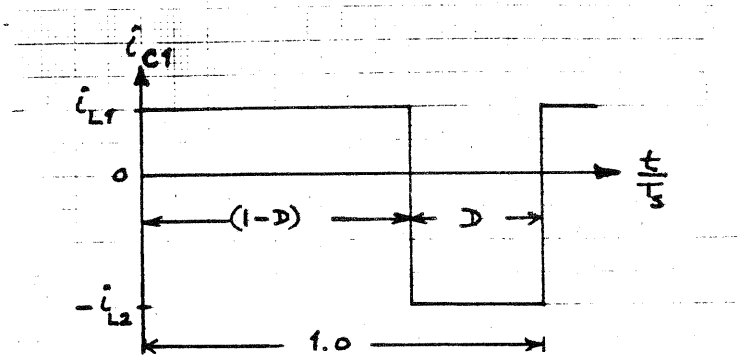
Cúk CONVERTER

Problem 7-17

When the switch is off: $i_{c1} = i_{L1}$
When the switch is on: $i_{c1} = -i_{L2}$
Assume a constant $i_{L1} = I_d = 0.5A$, and a constant $i_{L2} = I_o = 1A$.
D = 0.333 (Example 7-3)



$$\therefore I_{c1}(\text{rms}) \approx \sqrt{\frac{(0.5^2 \text{x} 0.667) + 1^2 \text{ x } 0.333}{1}} = 0.707\text{A}$$