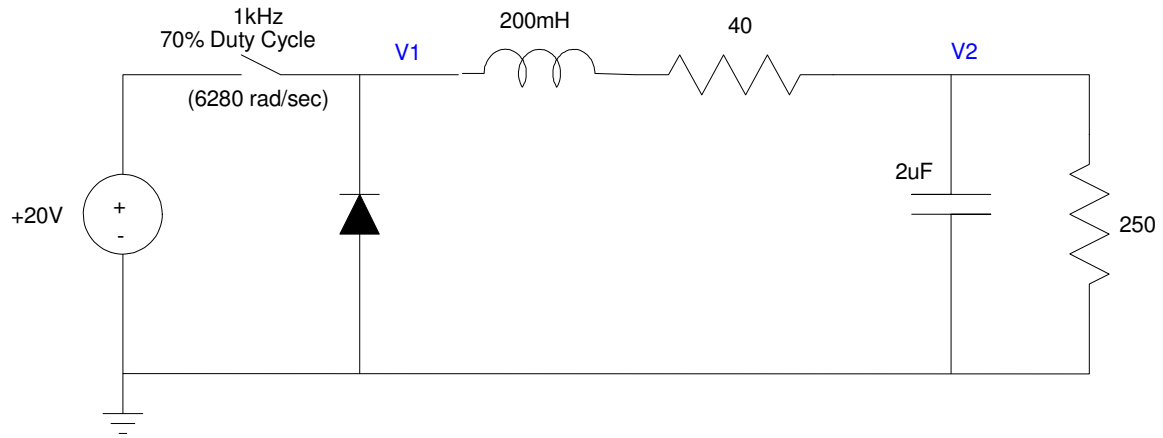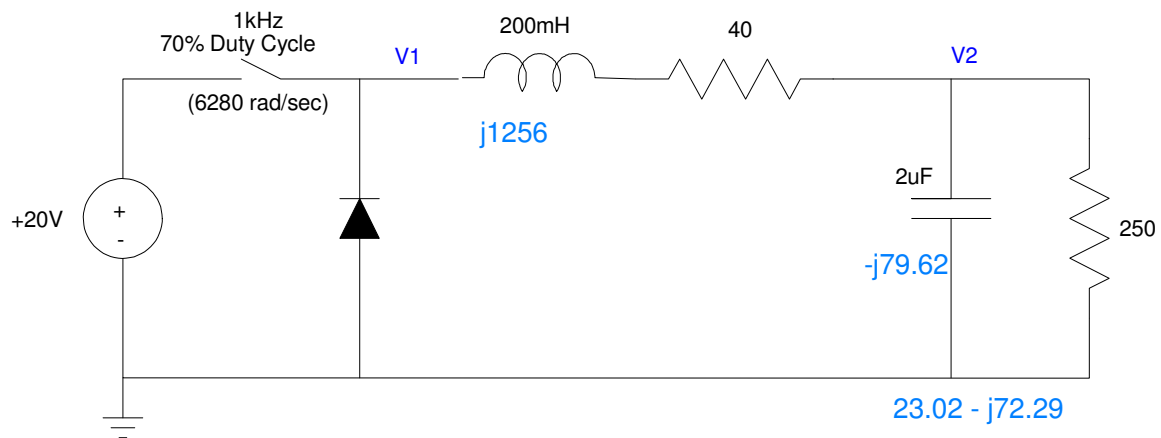# ECE 320: Handout #15

DC to DC Converters

Determine V1 and V2 (both DC and AC)

**Solution:**



DC Analysis

$$V_1(DC) = 0.7 \cdot (20V) + 0.3 \cdot (-0.7V)$$

$$V_1(DC) = 13.79V$$

$$V_2(DC) = \left(\frac{250}{250+40}\right) 13.79V$$

$$V_2(DC) = 11.89V$$

AC Analysis

$$\omega = 6280 \frac{rad}{\sec}$$

$$V_1(AC) = 20.7V_{pp}$$

$$V_2(AC) = \left(\frac{(23.02 - j72.29)}{(23.02 - j72.29) + (40 + j1256)}\right) 20.7V_{pp}$$

$$V_2(AC) = 1.3248V_{pp}$$