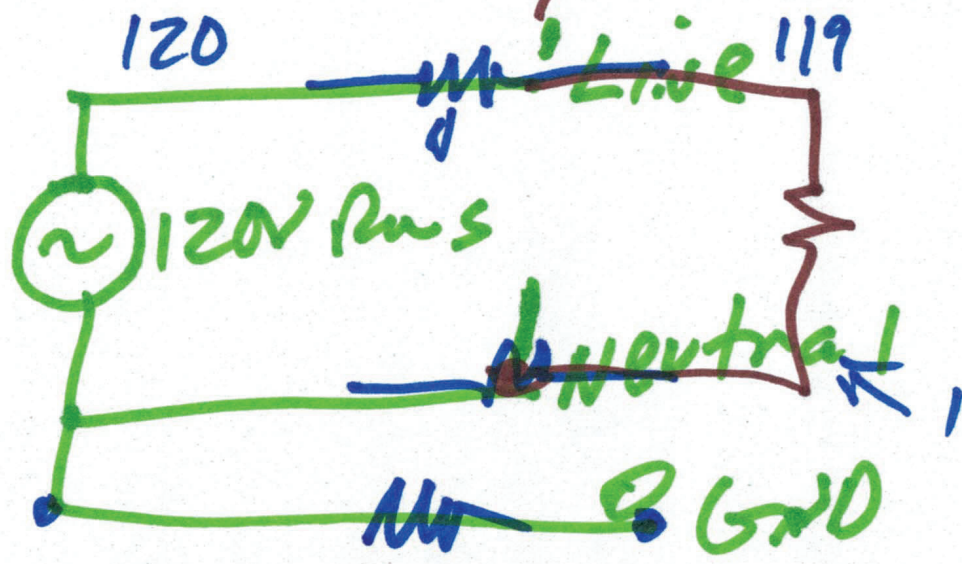


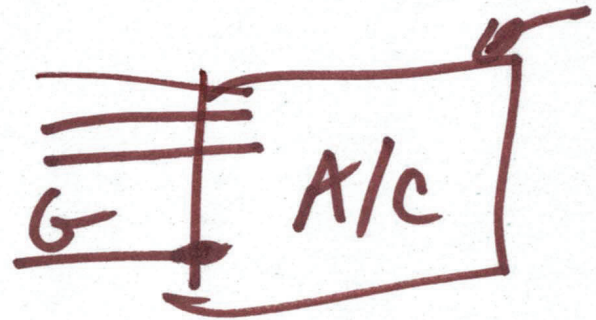
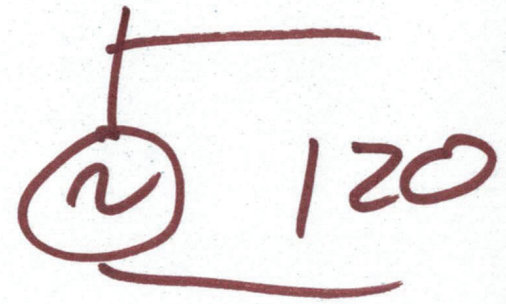
EE 220
Circuits 1
Lecture 25

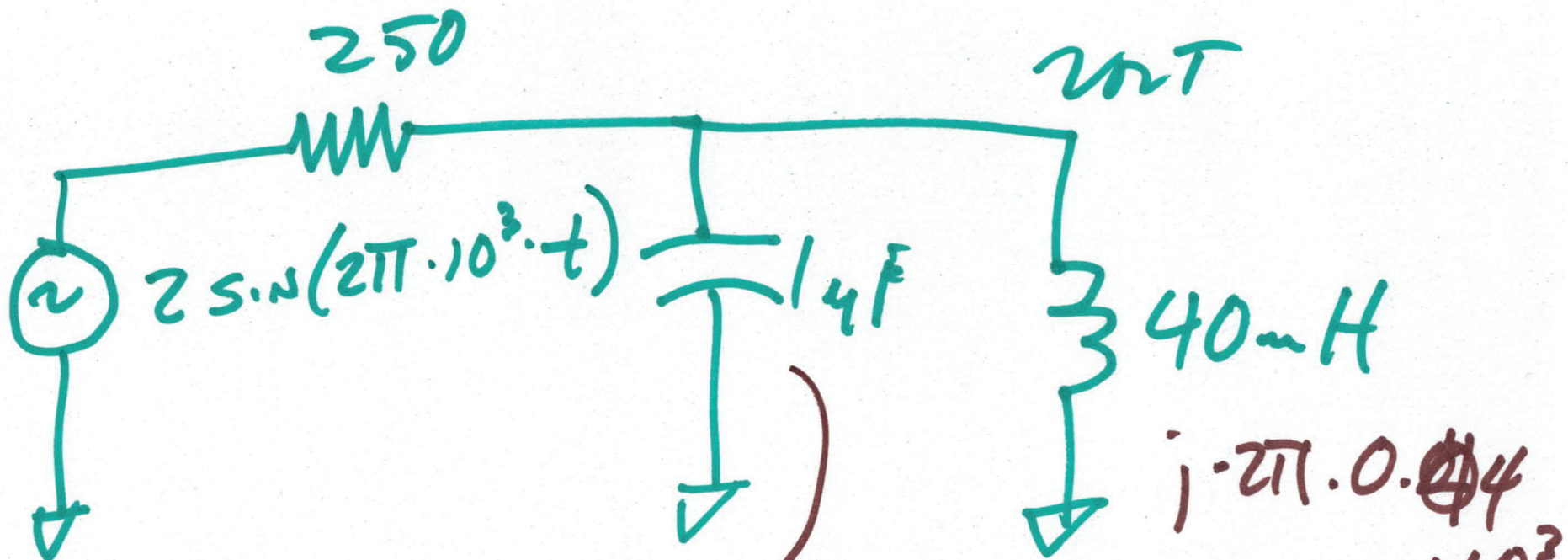
NOV. 25, 2020





WATER

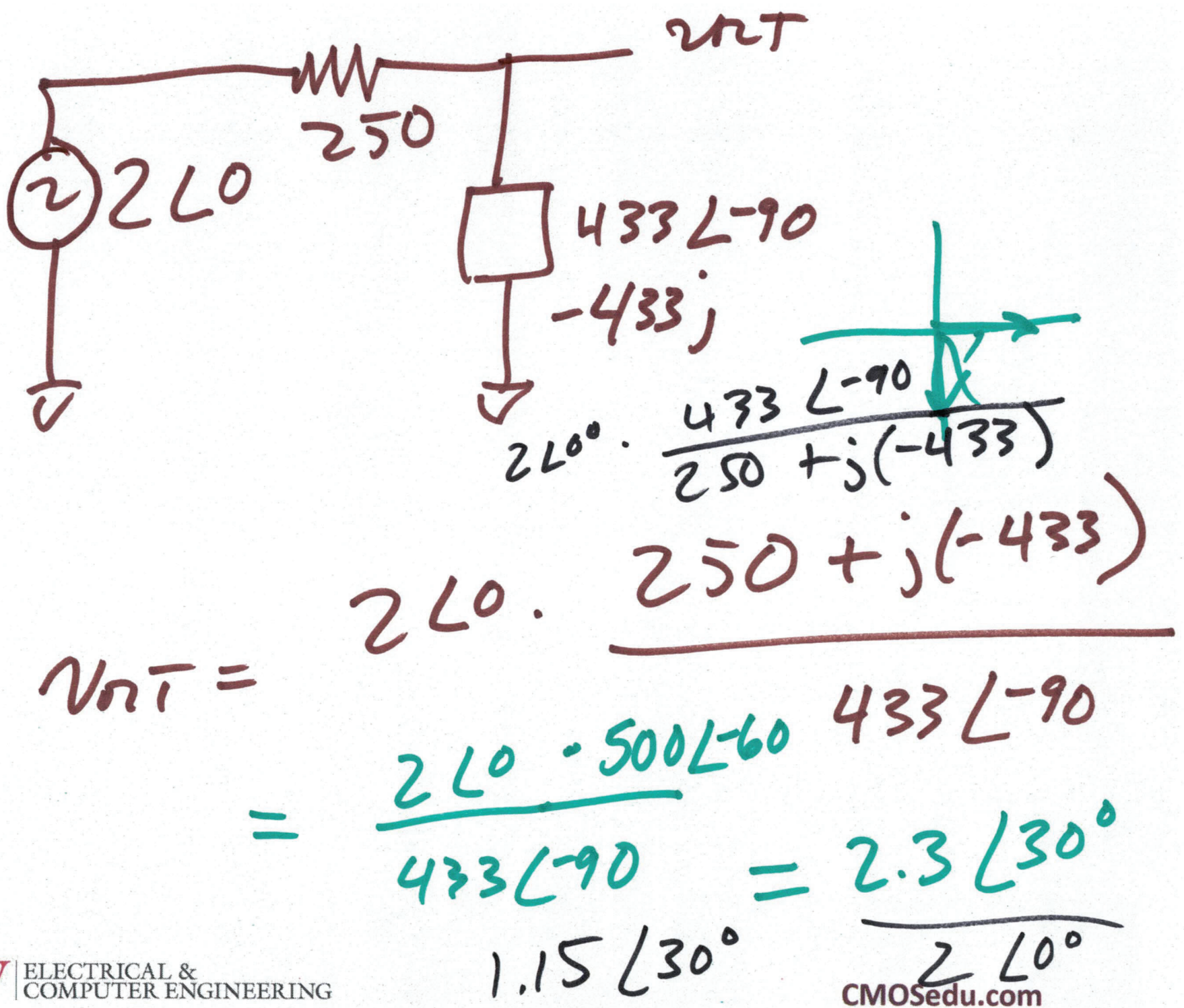




$j \cdot 2\pi \cdot 0.04 \cdot 10^3$
 $251j$

$$z_{ef} = \frac{(-159j)(251j)}{j(251 - 159)} = -159j$$

$$\frac{39,909}{j92} = 433 \angle -90$$



$$V_{out} = \frac{2 \angle 0 \cdot 433 \angle -90^\circ}{250 + j(-433)}$$

$$t_d = 83.3 \mu s$$

$$\frac{2 \cdot \angle 0 \cdot 433 \angle -90}{500 \angle -60}$$

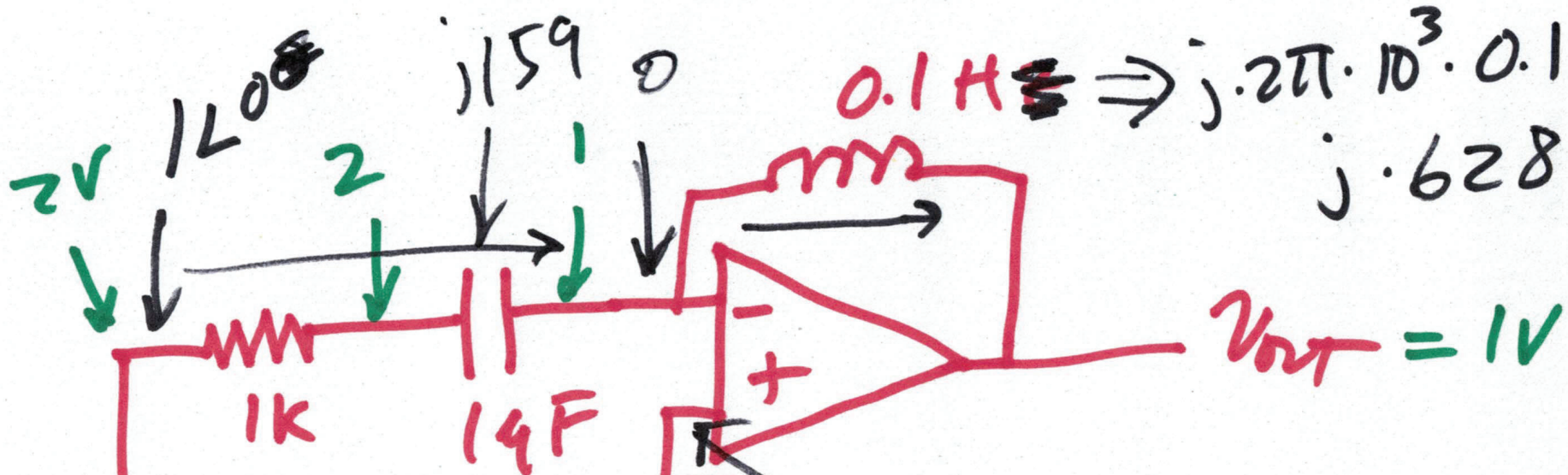
$$\frac{t_d}{T} = \frac{30}{360} = \frac{1}{12}$$

$$t_d = \frac{1}{12} \cdot 1 \mu s = 1.73 \angle -30$$

$$v_{in} = 2 \sin(2\pi \cdot 10^3 \cdot t)$$

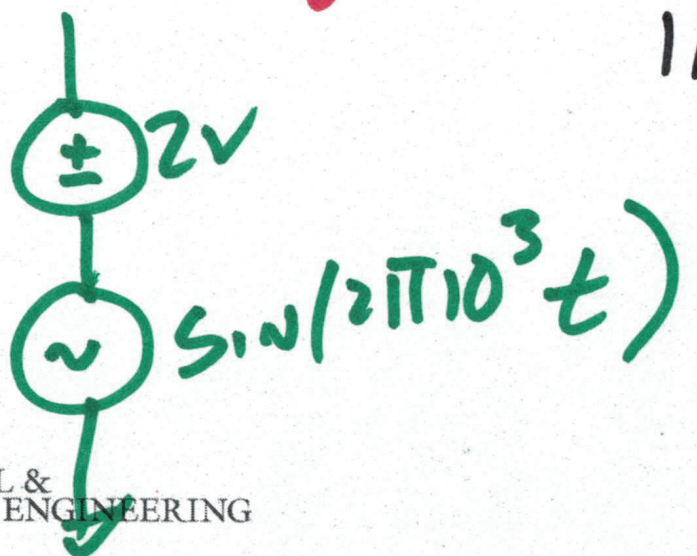
$$v_{out} = 1.73 \sin(2\pi \cdot 10^3 \cdot t - 30)$$

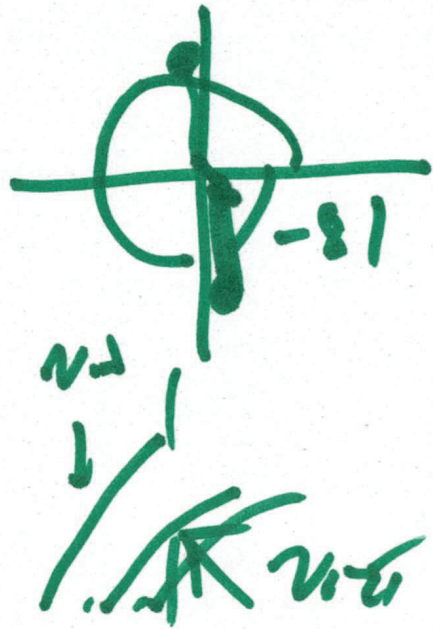
$$T = \frac{1}{10^3} \mu s$$



$2V + \sin(2\pi \cdot 10^3 \cdot t)$

$$\frac{120 - 0}{1k \mp j159} = \frac{0 - V_{out}}{j628}$$





$$\frac{120 \cdot 628 \angle 90^\circ}{1012 \angle -9^\circ} = -200T$$

$$-200T = .62 \angle 99^\circ$$

$$200T = .62 \angle -81^\circ$$

$$-81^\circ = 360 \cdot \frac{t_d}{1\mu s}$$

$$t_d = 0.225 \mu s$$