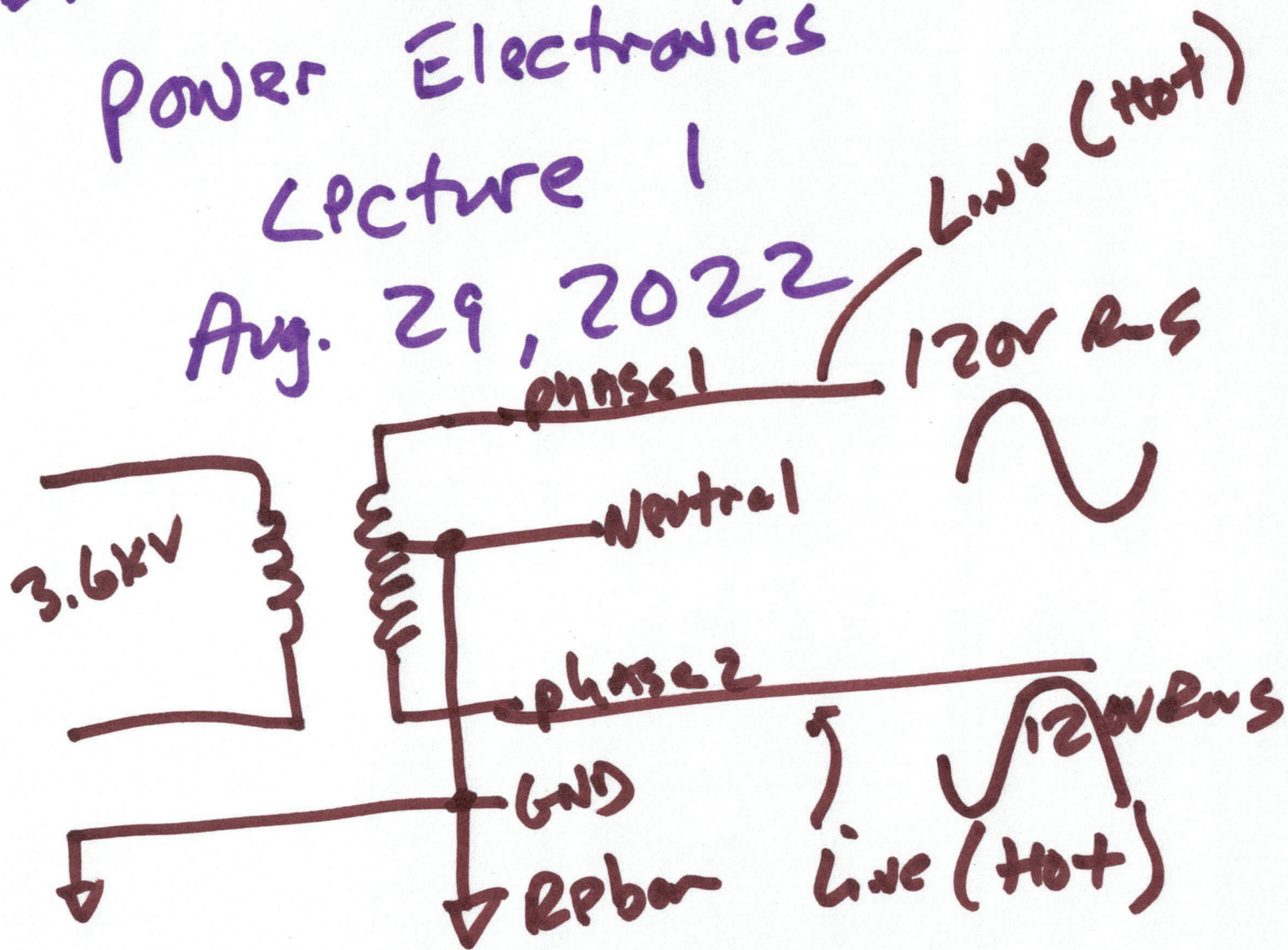
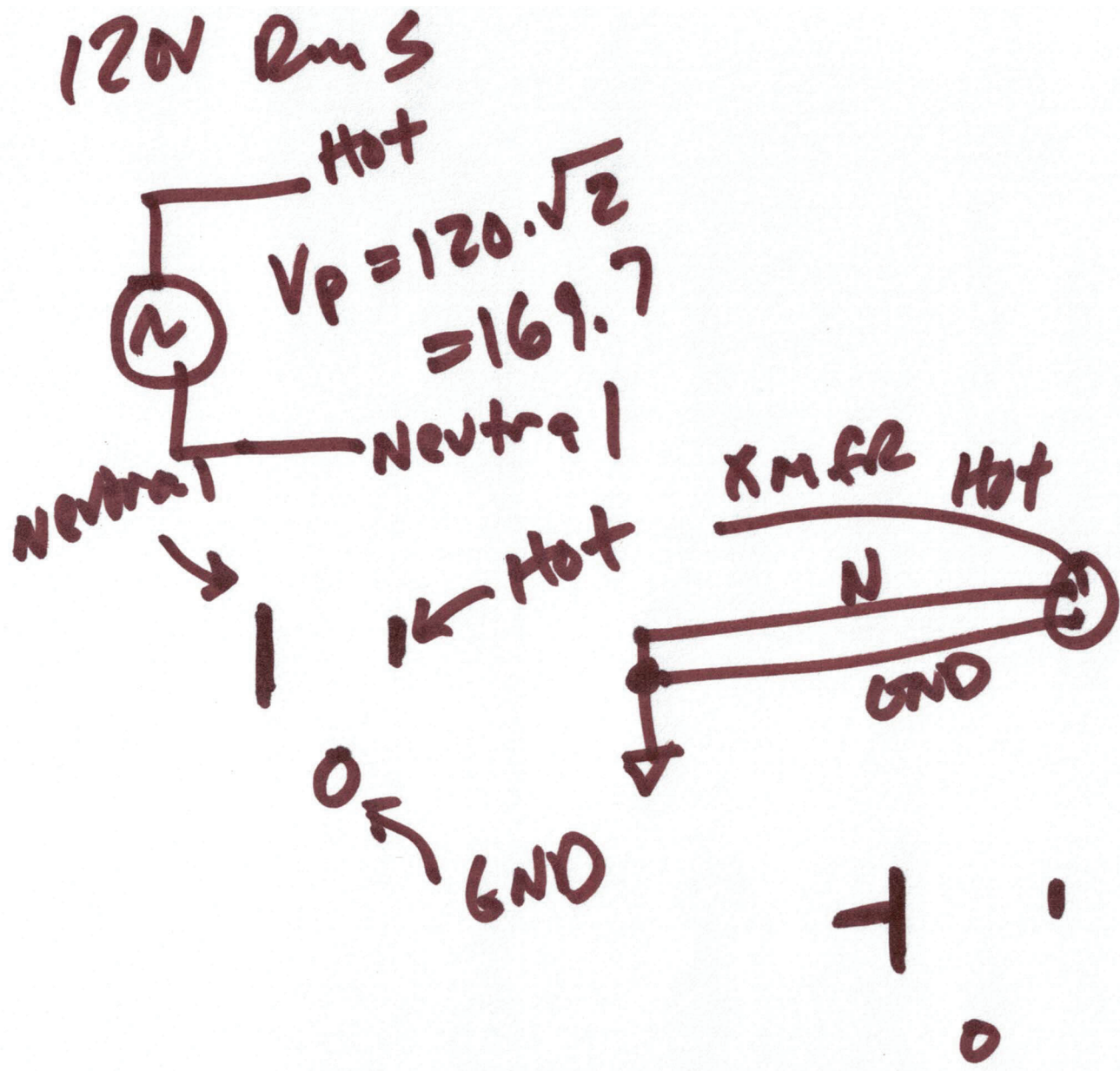


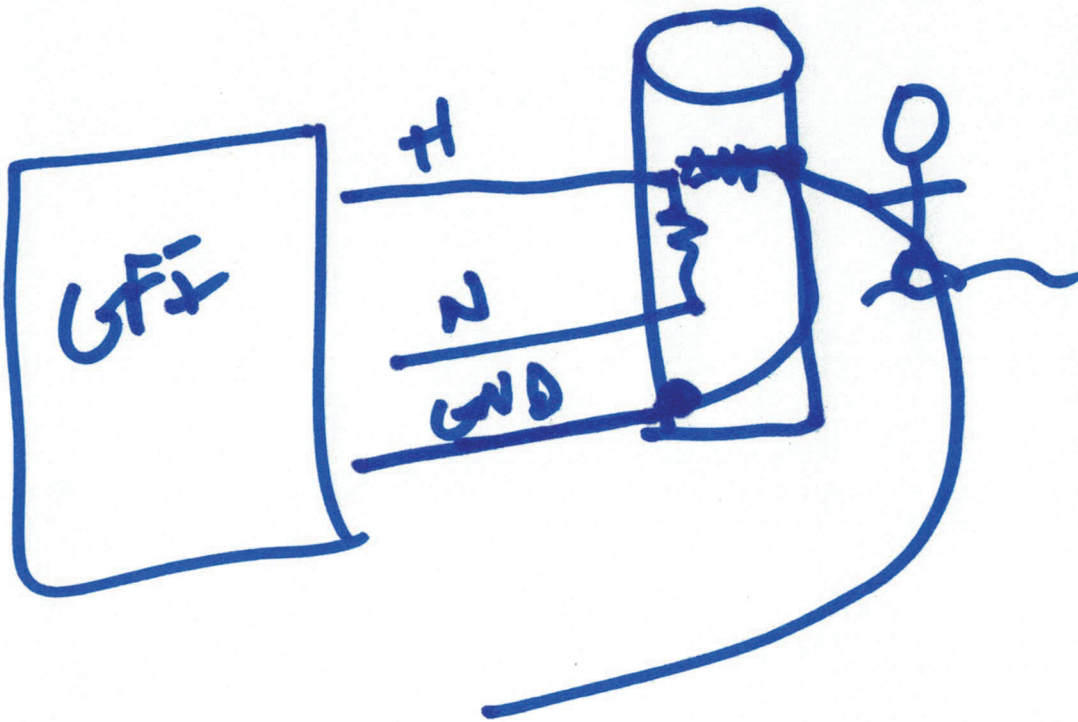
EE 442 / ECE 642
POWER Electronics
Lecture 1

Aug. 29, 2022

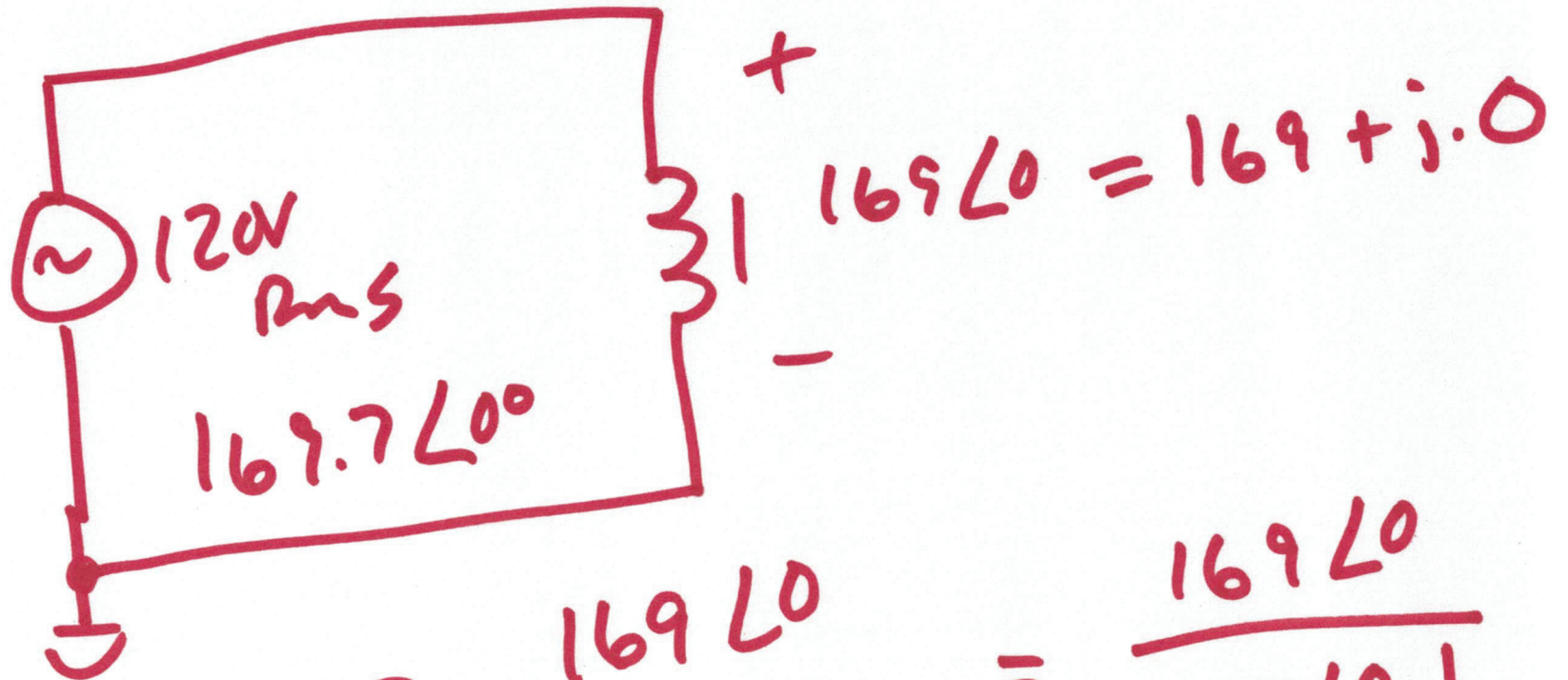




2)



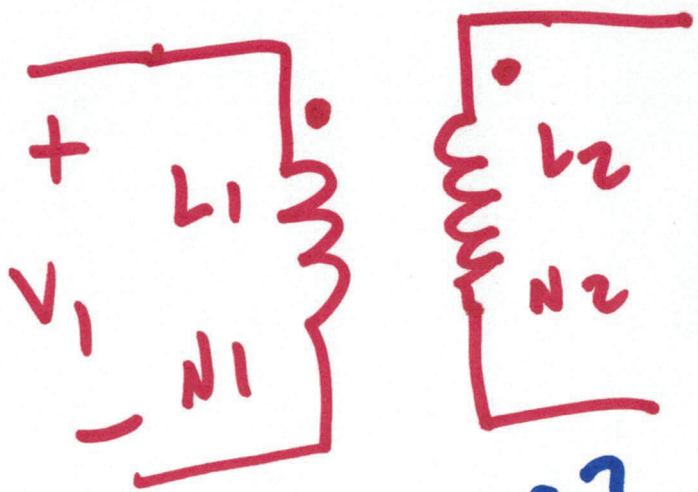
3)



$$I = \frac{169 \angle 0}{j\omega L} = \frac{169 \angle 0}{j2\pi \cdot 60 \cdot 1}$$

$$I = 450 \mu\text{A} \angle -90 = \frac{169 \angle 0}{2\pi \cdot 60 \angle 90}$$

4)

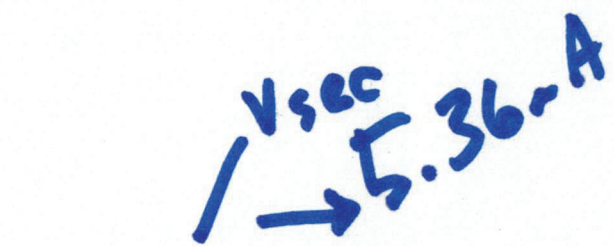
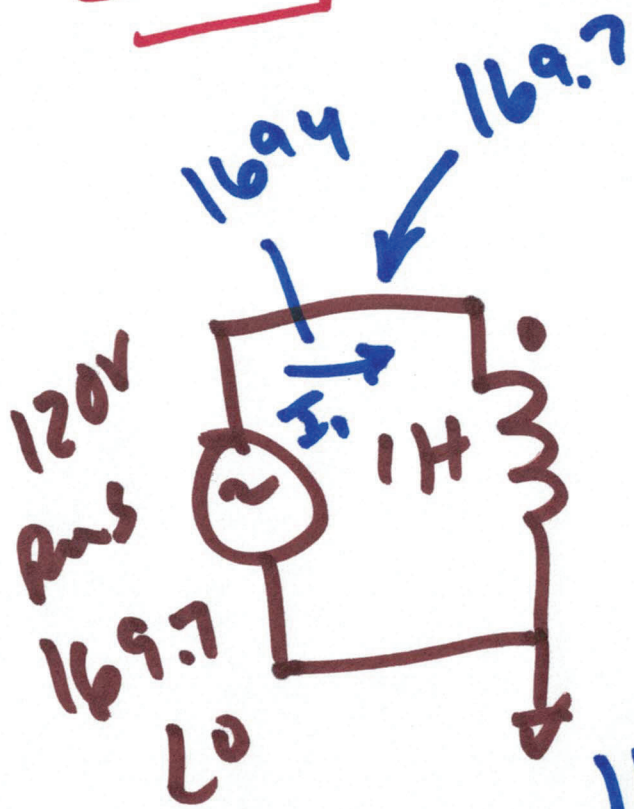


$$+ v_2$$

$$-$$

$$\frac{I_1}{I_2} = \sqrt{\frac{L_2}{L_1}}$$

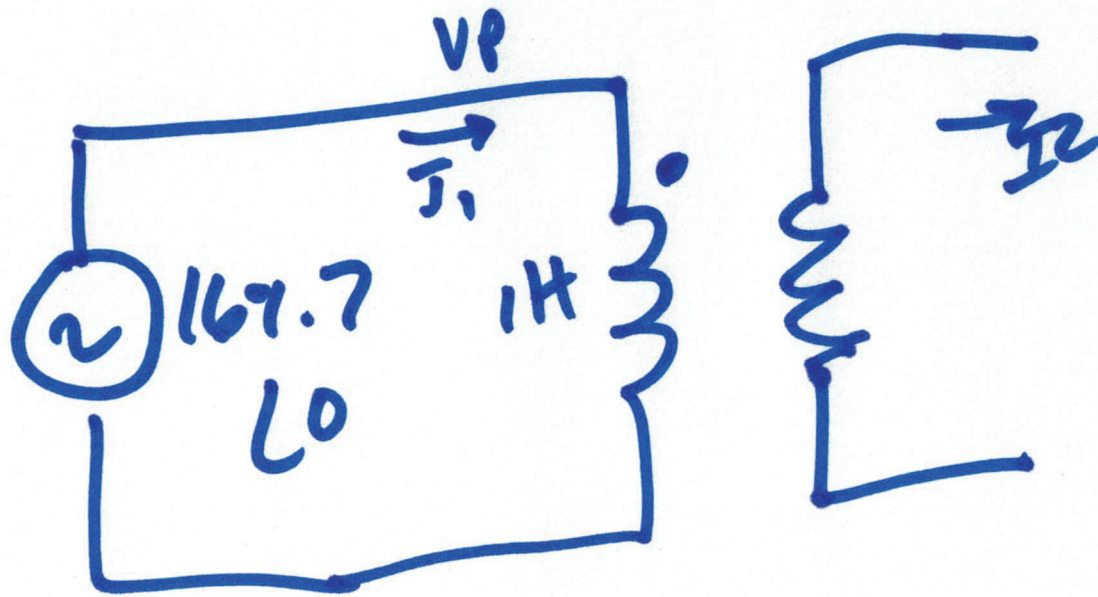
$$\frac{V_1}{V_2} = \sqrt{\frac{L_1}{L_2}}$$



$$\frac{169.7}{V_{sec}} = \sqrt{\frac{1}{.001}}$$

$$1694 = I_1 = 5.36 \mu A \cdot \sqrt{\frac{1nH}{1H}}$$

5)



$$I_1 = \frac{169.7 V_0}{j\omega L} = \frac{169.7 V_0}{j \cdot 2\pi \cdot 60 \cdot 1 H}$$

$$I_1 = 450 \text{ mA} \angle -90^\circ$$