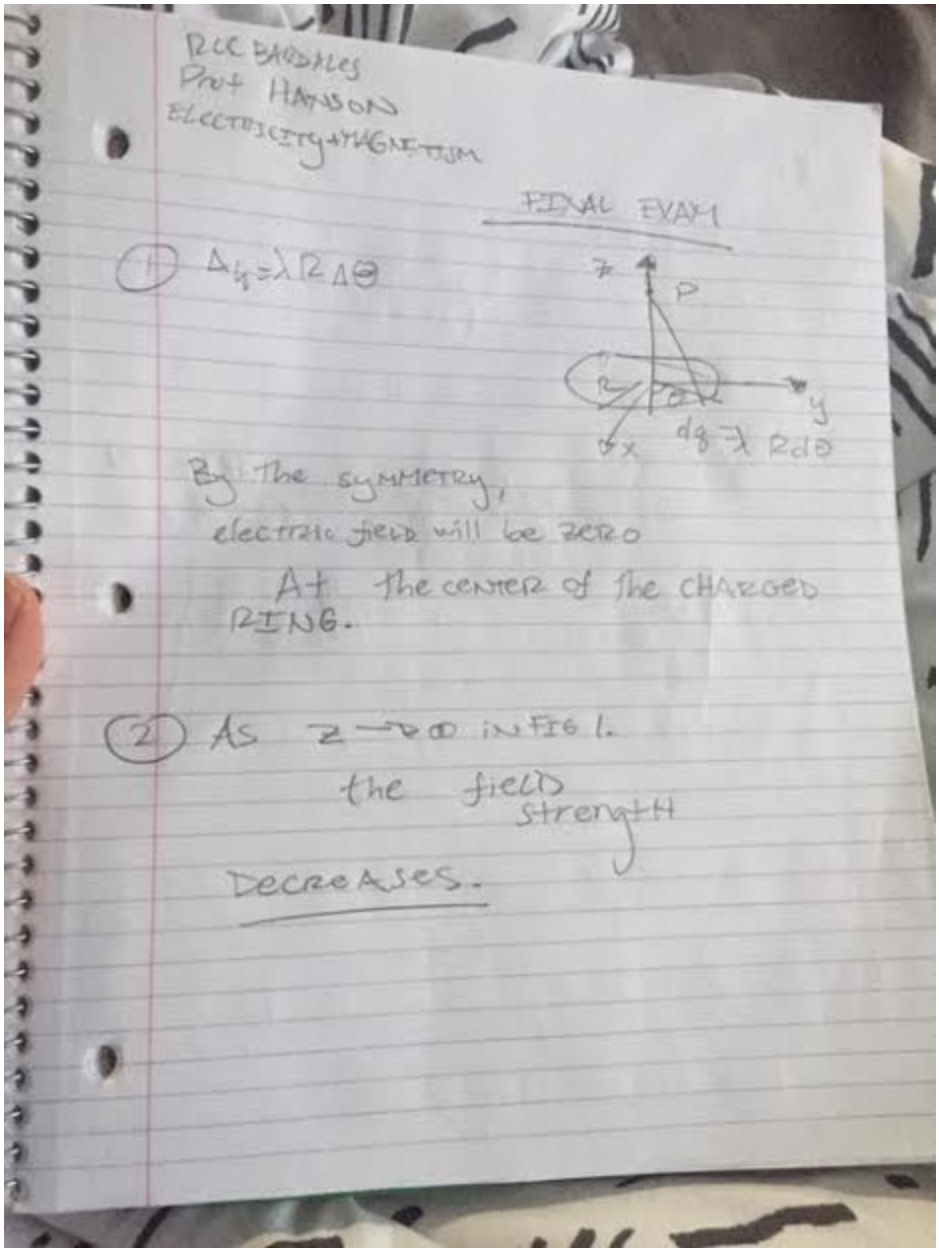
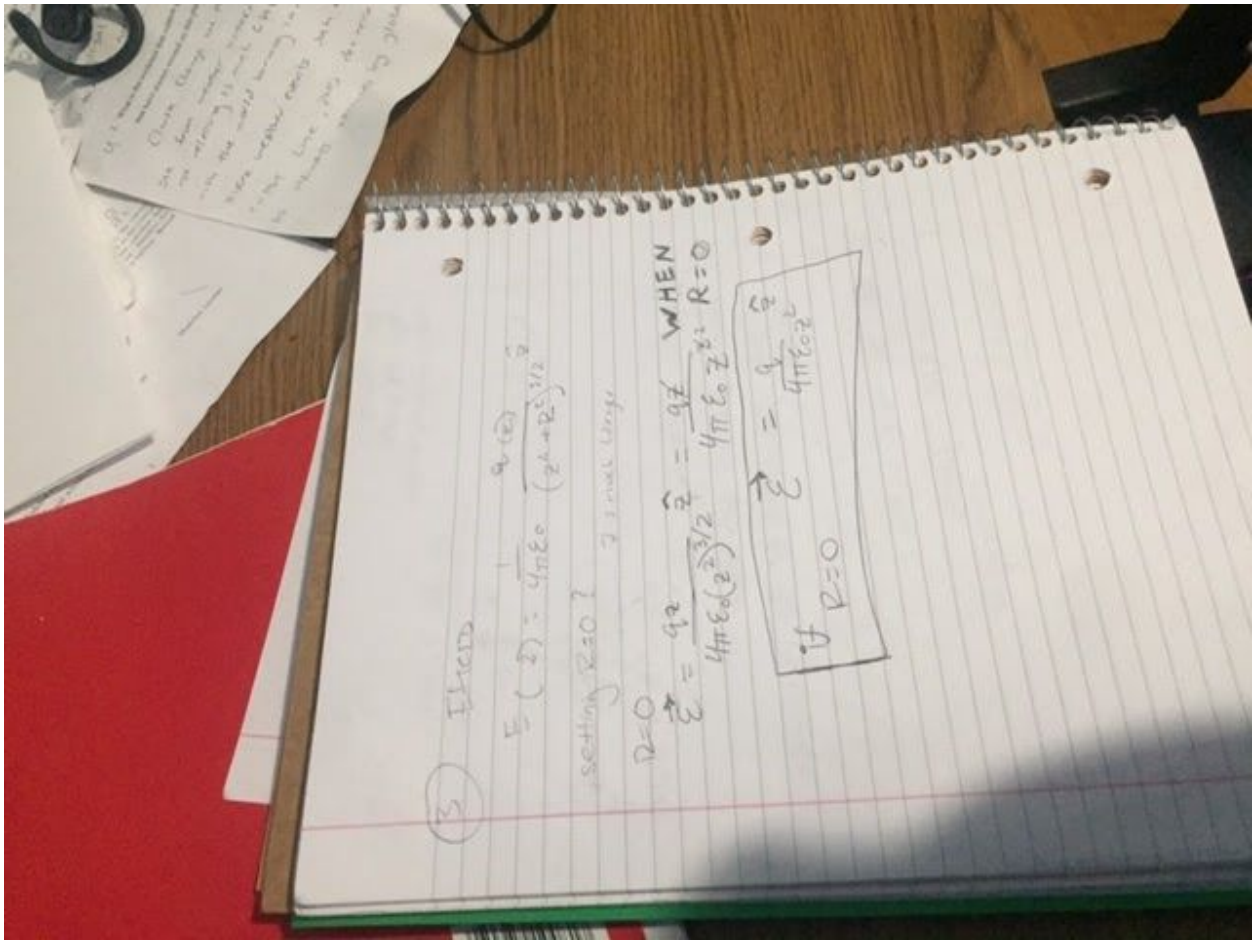
Roc Bardales

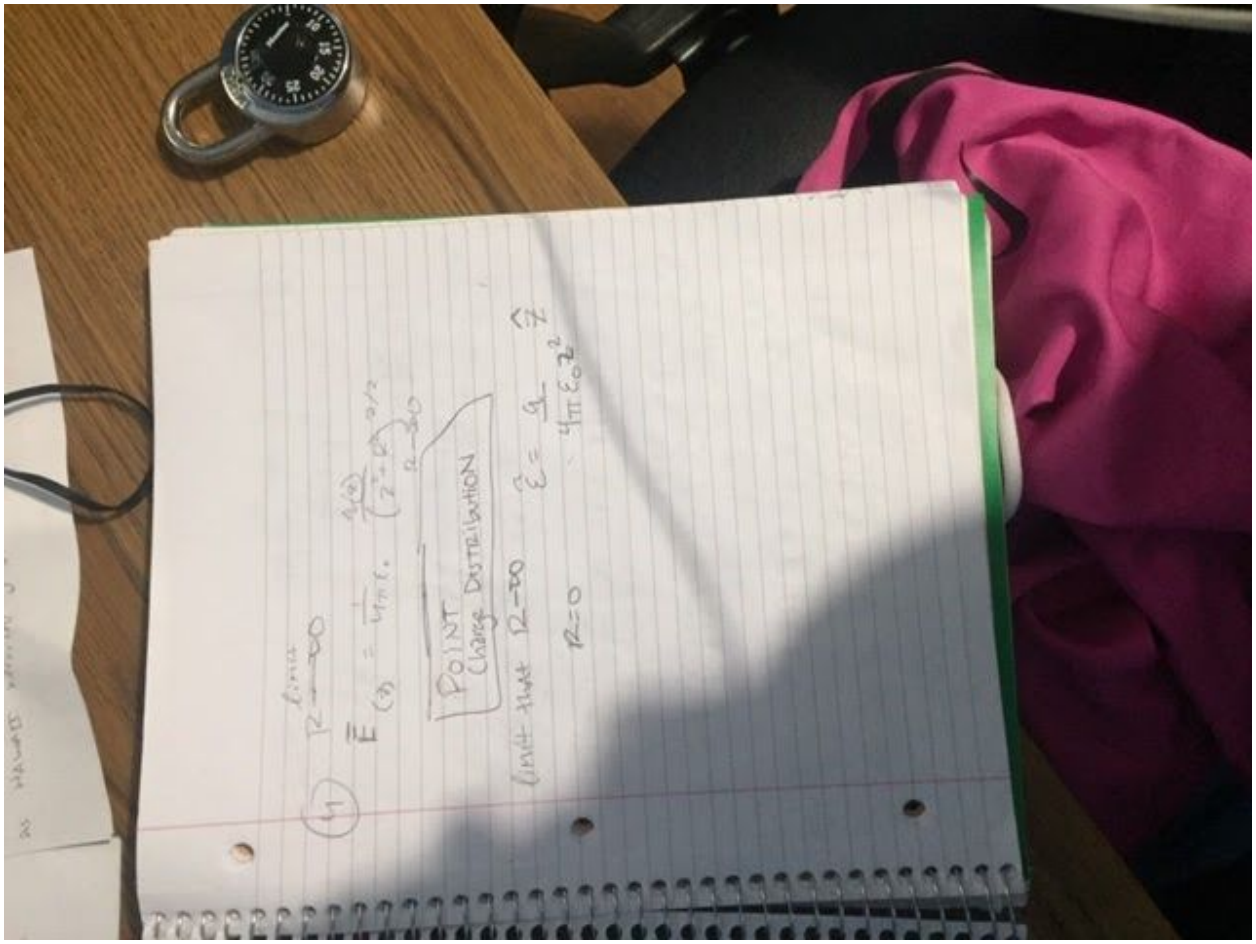
Professor Hanson

1 and 2

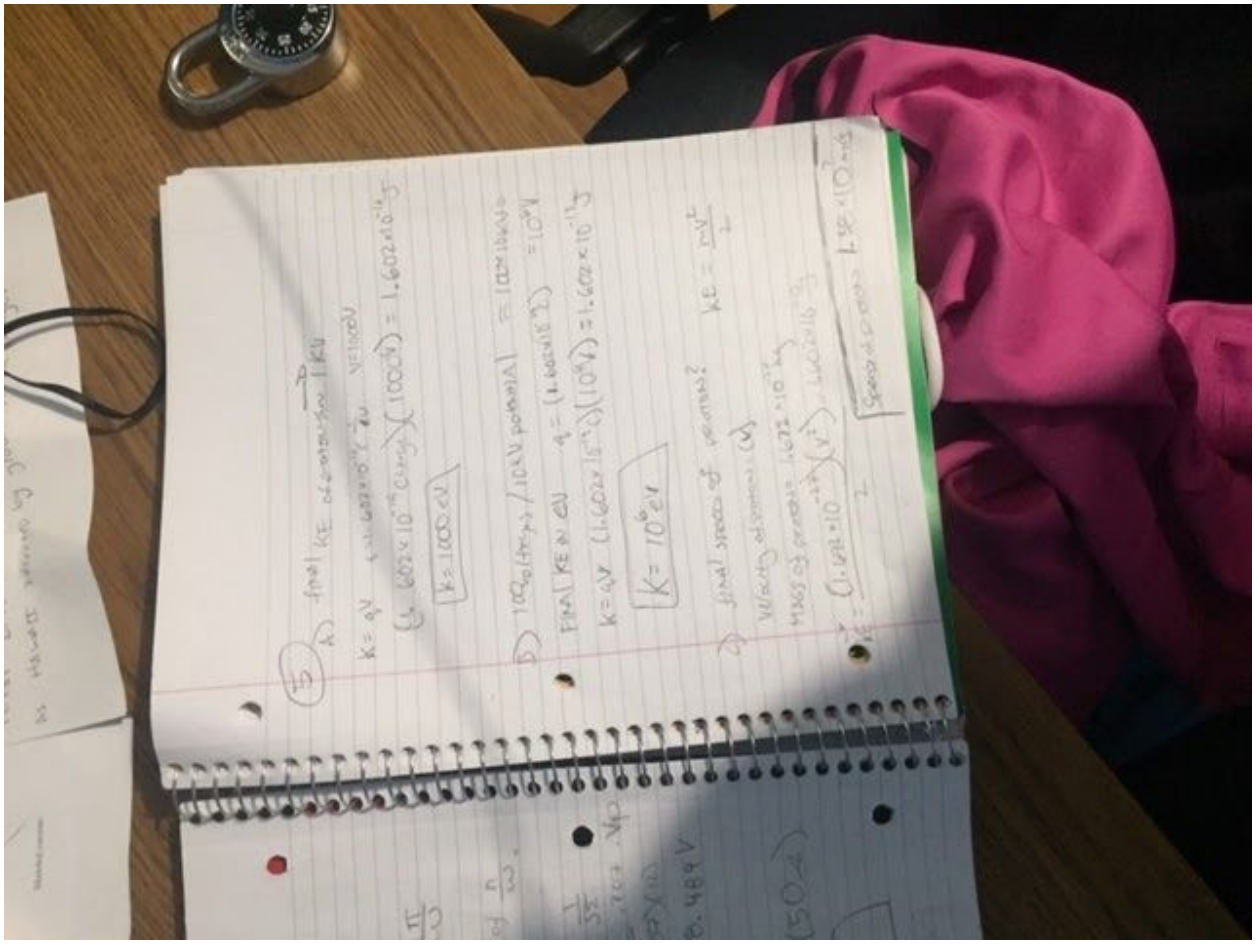




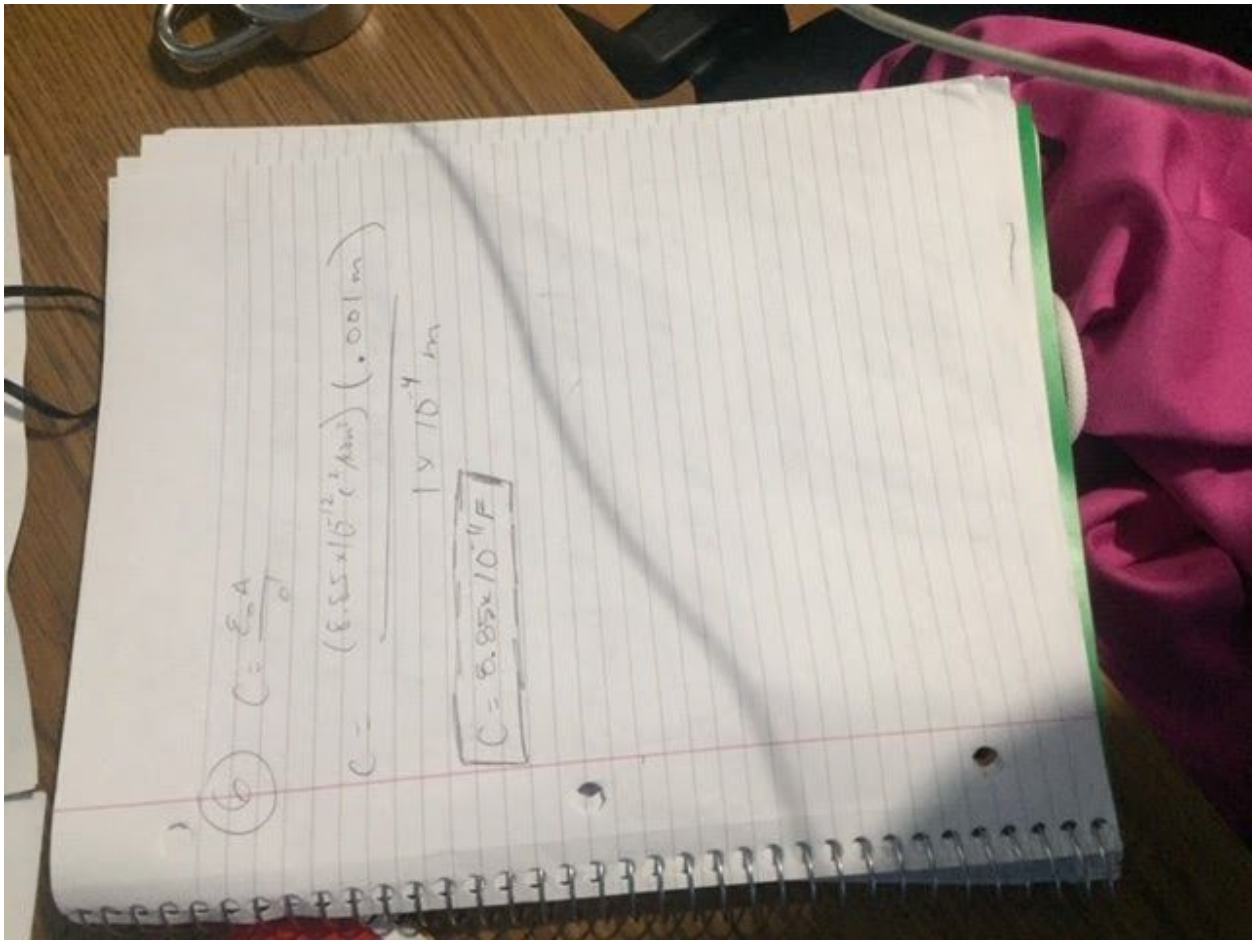
Problem #4



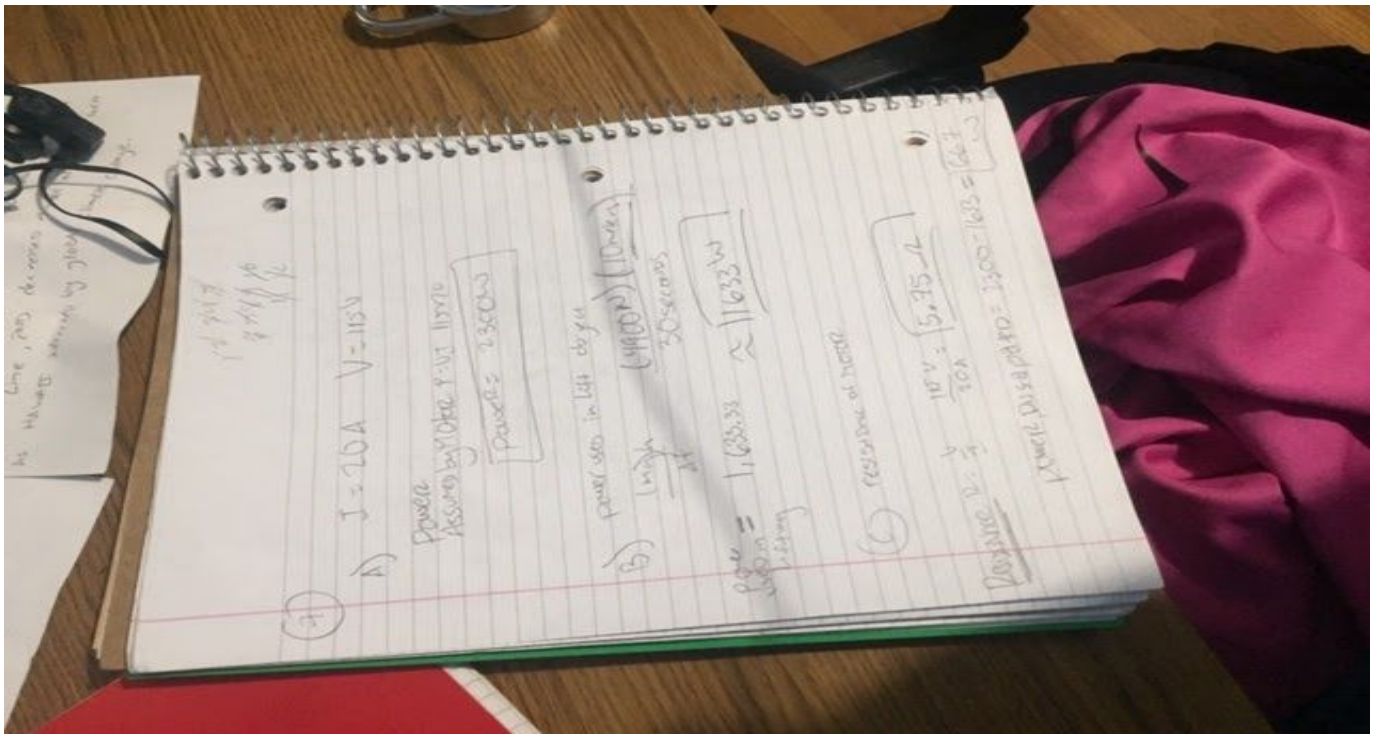
Problem #5 A , B, and C



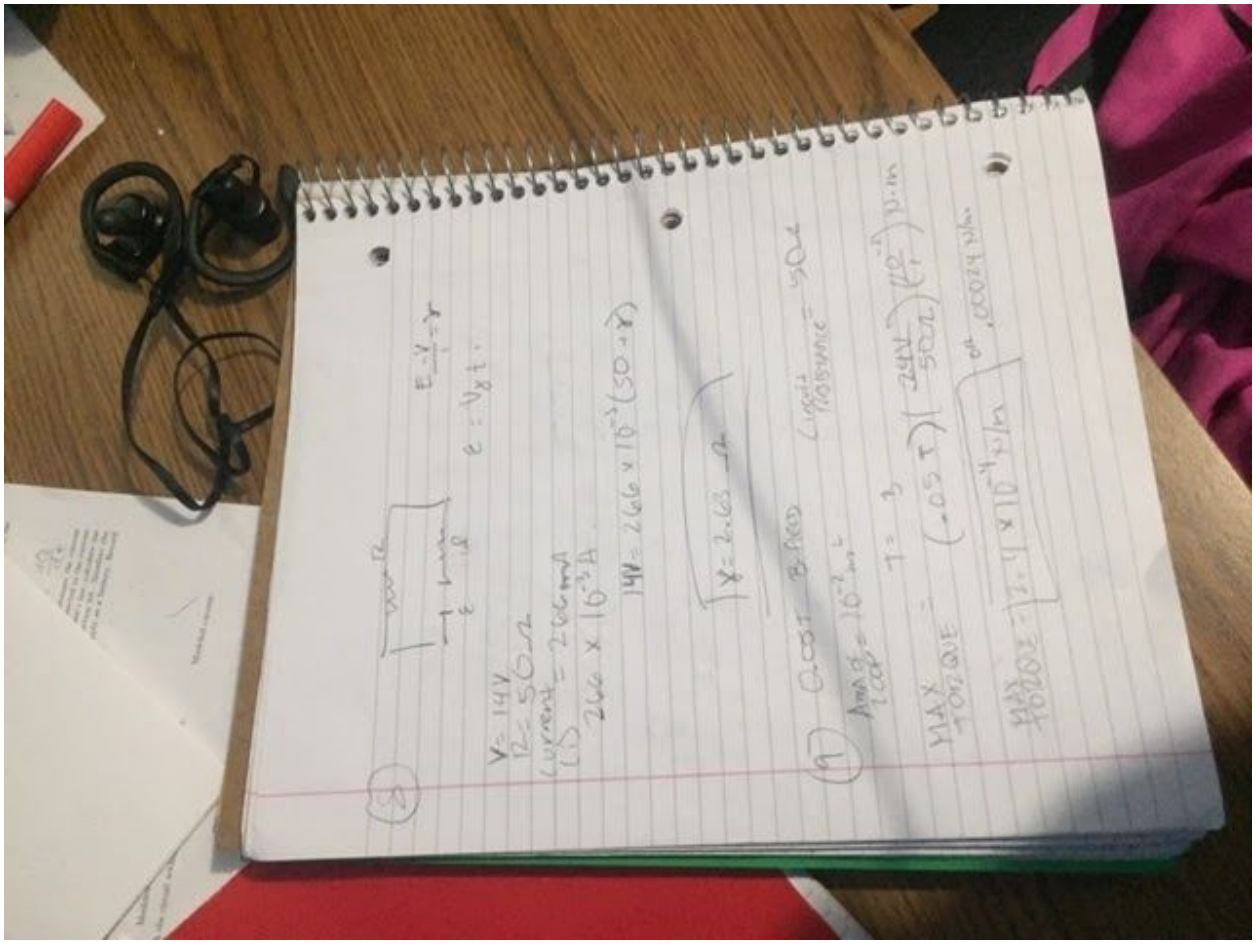
#6


⑥
$C = \frac{\varepsilon_0 A}{d}$
$C = \frac{(8.85 \times 10^{-12} C^2/Nm^2)(.001 m)}{1 \times 10^{-4} m}$
$C = 8.85 \times 10^{-11} F$

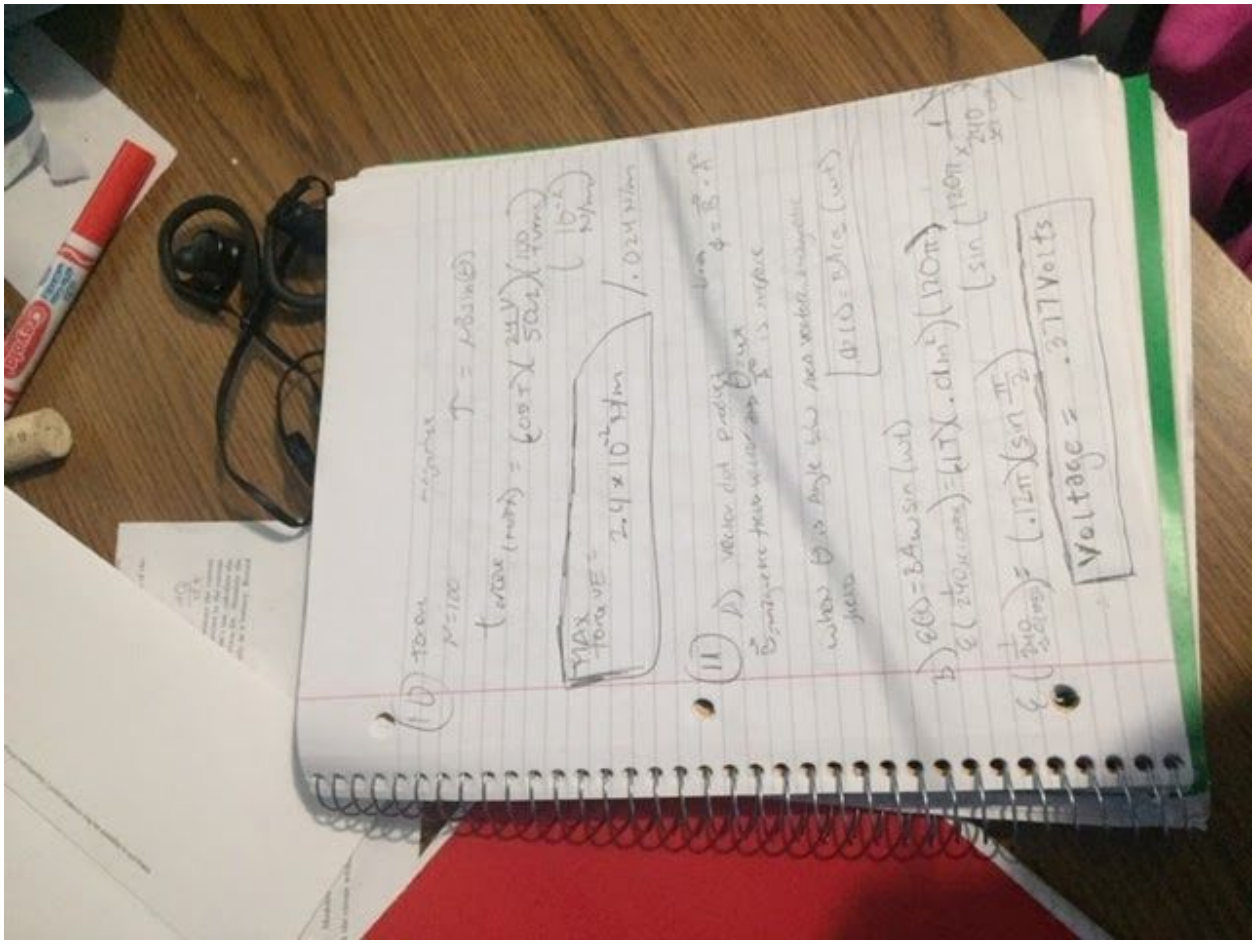
#7



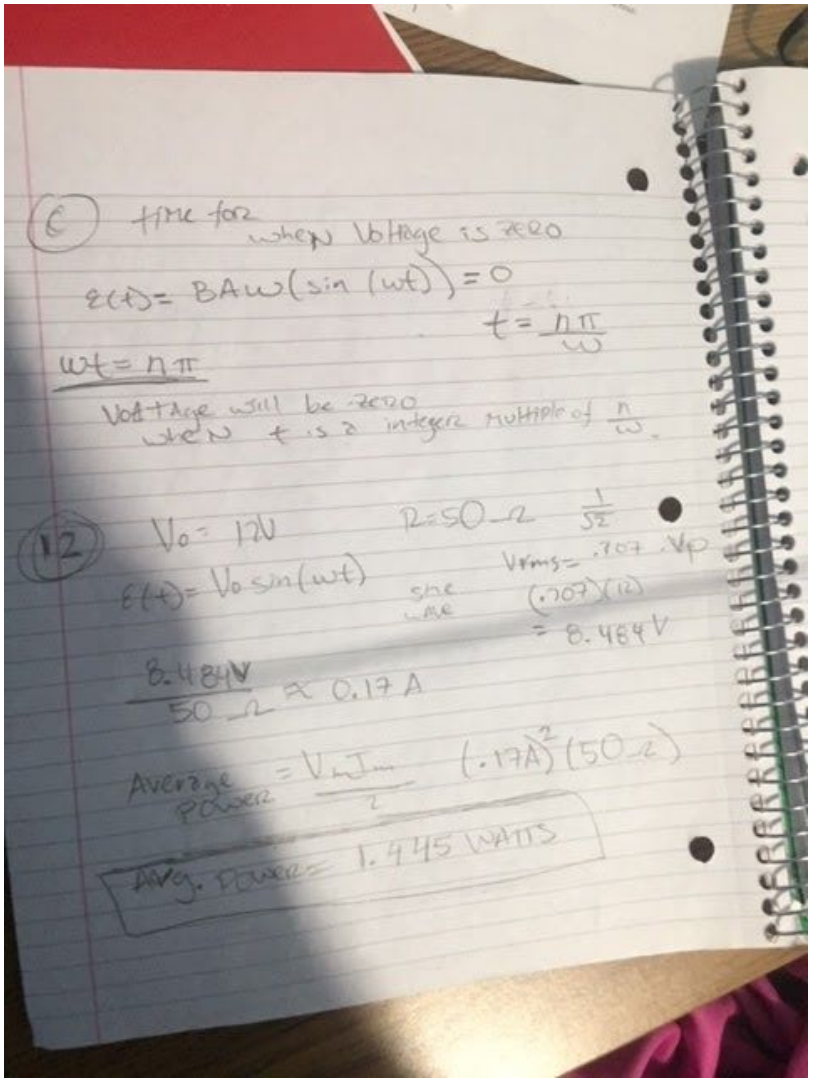
#8 and #9



#10 and 11 A and B



11C AND 12



(c) time for when voltage is zero

$\mathcal{E}(t) = BA\omega(\sin(\omega t)) = 0$

$t = \frac{n\pi}{\omega}$

$\omega t = n\pi$

Voltage will be zero when t is a integer multiple of $\frac{n}{\omega}$.

(12) $V_0 = 12V$ $R = 50\,\Omega$ $\frac{1}{\sqrt{2}}$

$\mathcal{E}(t) = V_0 \sin(\omega t)$ sine wave $V_{rms} = .707 \cdot V_p$

$(.707)(12) = 8.484V$

$\frac{8.484V}{50\,\Omega} \approx 0.17A$

Average Power $= \frac{V_m I_m}{2}$ $(.17A)^2(50\,\Omega)$

Avg. Power = 1.445 WATTS