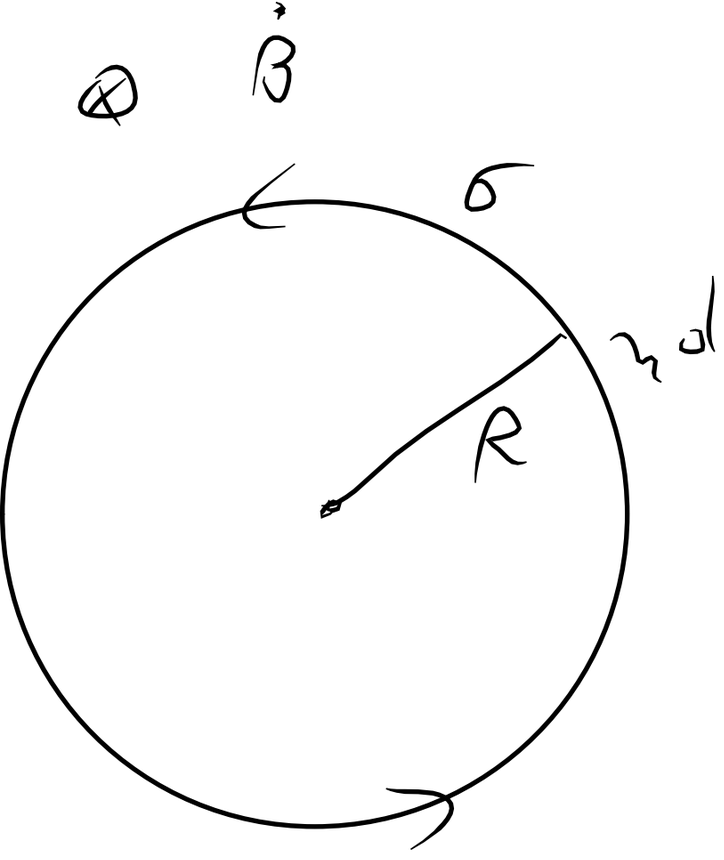

$$\frac{dP}{dV} = jE = \sigma E^2$$

$$\oint E\,d\bar{l} = \frac{-d\Phi_B}{dt}$$

$$2\pi r E = -\dot{B}\,\pi r^2$$

$$E = -\dot{B}\,\frac{r}{2}$$

$$P = \int_V \sigma E^2\,dV = \frac{\sigma \dot{B}^2}{4} \int_0^R \int_0^d \int_0^{2\pi} r^3\,dr\,dz\,d\varphi =$$

$$= \frac{\sigma \dot{B}^2 \pi d R^4}{8}$$