In Lecture 31 we presented the energy flux equation as

$$\frac{\partial F_{ws}(x,t)}{\partial t} = -\frac{dX}{dx} - \frac{3q}{m^*} W\mathcal{E}_s - \frac{F_{ws}}{\tau_{F_w}}$$

1) Verify that this result is correct.

Later in Lecture 31, we simply the result to

$$F_w = -3\mu_e W\mathcal{E}_s - 3\mu_e \frac{d(W k_B T_e / q)}{dx}$$

2) Verify that this result is correct.