

RW 3.6

a. $V = 30 \frac{\text{m}}{\text{s}}$ 1000 kg

$$E = \frac{1}{2} m v^2 = \frac{1}{2} 1000 (30)^2$$

b.

$$E = P t = V i t$$

$$\frac{1}{2} 1000 (30)^2 = V i t = 29 i t$$

$$\boxed{\frac{1000 (30)^2}{2(29)}} = i t$$

$$E = \int P(t) dt = \int V(t) i(t) dt$$

if V and i
constant

$$E = V i \int dt = V i t$$