

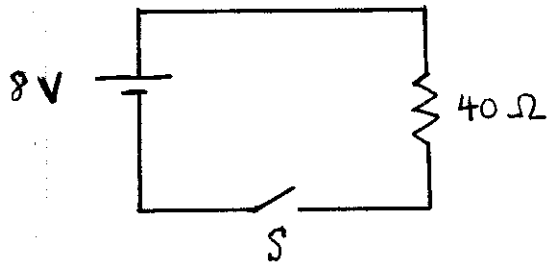
Name: Adam Cohen

Phys 122-401

10/3/06

QUIZ 4: Electric Current

- ① Consider the circuit below. If the switch is closed at $t=0$, how much total charge has passed through the wire at $t=40$ s?



Ohm's Law:

$$\Delta V = IR$$

$$I = \frac{\Delta V}{R} = \frac{8V}{40\Omega} = \frac{8}{40} \text{ A}$$

current $I \equiv \frac{\Delta Q}{\Delta t} \Rightarrow$

$$\Delta Q = I \Delta t$$

$$= \left(\frac{8}{40} \text{ A}\right) (40 \text{ s})$$

$$\boxed{\Delta Q = 8 \text{ C}}$$