5. (20) A total of 180 coulombs flows (at a constant rate) through a battery in one minute. 
   a) What is the current in the battery? 
   b) How many electrons went through the battery in one minute?
   
   a) \[ I = \frac{Q}{T} = \frac{180}{60s} = 3A \]
   
   b) Charge on electron = \(-1.6022 \times 10^{-19}\) C
   
   \[ N = \frac{180C}{1.6022 \times 10^{-19}} = 1,1235 \times 10^{21}\text{ electrons} \]