

20.2

(a) Use $\Delta q = I \Delta t$ ans. $3.6 \times 10^{-2} \text{ C}$

(b) Use $N = \frac{\Delta q}{e}$ ans. 2.3×10^{17}

20.6

Use $\Delta q = I \Delta t$ & Energy = $(\Delta q) V$ ans. $1.3 \times 10^6 \text{ J}$

20.7

Use Energy = $V \Delta q$ & $\Delta q = I \Delta t$

\Rightarrow Energy = $VI \Delta t$

Use Ohm's law to obtain the current.

20.10

Use $R = \frac{\rho L}{A}$ & Table 20.1 ans. 0.58Ω

20.15

Use $R = R_0 [1 + \alpha(T - T_0)]$ then obtain α .

Use $R = R_0 [1 + \alpha(T - T_0)]$ again; then solve for T .

20.22

Use both $P = IV$ & $V = RI$.

(a) ans. 4.4Ω

(b) ans. 2.8 A

20.27 ask the instructor.

20.32

(a) Use $I = I_0 \sin 2\pi ft$ ans. 50 Hz

(b) Use Ohm's law ans. $2.4 \times 10^2 \Omega$

(c) Use $\bar{P} = I_{\text{rms}} V_{\text{rms}}$ ans. 60.0 W

20.33

(a) Use $P = IV$ & $V = RI$

(b) ask the instructor if you don't solve it.