P #11

Ch 11 - pg 353

$m_{Al} = 200g = .200\,kg$
$c_{Al} = 900\ J/kg \cdot °C$

$m_{H_2O} = 800g = .800\,kg$
$c_{H_2O} = 4186\ J/kg \cdot °C$

$\Delta T = 1.5\,°C$
$t = 1\ min = 60\ sec$

$$\frac{Q}{t} = \frac{Q_{Al} + Q_{H_2O}}{t} = \frac{(m \cdot c \cdot \Delta T)_{Al} + (m \cdot c \cdot \Delta T)_{H_2O}}{t}$$

$$= \frac{(.200\,kg)(900\ J/kg \cdot °C)(1.5\,°C) + (.800\,kg)(4186\ J/kg \cdot °C)(1.5}{60\ sec}$$

$$Q/t = 88.2\ W$$