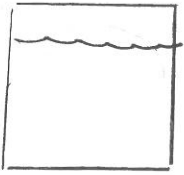


19-15  
1

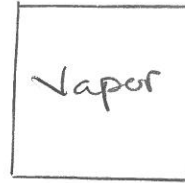
Initial



Hg

$$M = 20\text{g} = 0.02\text{ kg}$$
$$T_i = 20^\circ\text{C}$$

Final



$$T_f = 357^\circ\text{C}$$

(boiling pt. of Hg)

$$\text{Heat} = \text{Heat from } 293\text{K} \rightarrow 357\text{K} + \text{Heat to vaporize at } 357\text{K}$$

$$= Mc\Delta T + MLV$$

$$= Mc(T_f - T_i) + MLV$$

$$\text{where } c = 140 \text{ J/kg}^\circ\text{C}$$

$$L_v = 2.96 \times 10^5 \text{ J/kg}$$

$$\underline{\text{Heat} = 6864 \text{ J.}}$$