P #32

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$v = 2.0 \text{ m/s}$

$m_{hammer} = .5 \text{ kg}$

$L_f = 3.33 \times 10^5 \text{ J/kg}$

$m_{ice} = ?$

$KE = Q_{gain}$

$\frac{1}{2} \cdot m_{hammer} \cdot v^2 = m_{ice} \cdot L_f$

$\frac{1}{2} \cdot (.5 \text{ kg}) \cdot (2.0 \text{ m/s})^2 = m_{ice} \cdot (3.33 \times 10^5 \text{ J/kg})$

$m_{ice} = 3.0 \times 10^{-6} \text{ kg}$