PADRÃO DE RESPOSTAS

(VALOR POR QUESTÃO = 2,00 PONTOS)

Questão	Resposta
1	$Q = m \times c \times \Delta T$ $Q = 500 \times 1 \times (36,7 - 15) = 10\,850$ cal
2	$P_0 = \dfrac{(V_0)^2}{R} \rightarrow R = \dfrac{(V_0)^2}{P_0}$ $P = \dfrac{V^2}{R} = \left(\dfrac{V}{V_0}\right)^2 \times P_0 = \left(\dfrac{100}{200}\right)^2 \times 60 = 15$ W $E = P \times \Delta T = 15 \times 4 = 60$ Wh $= 0,06$ kWh
3	$n = \dfrac{c}{v} = \dfrac{\text{sen } i}{\text{sen } r} \rightarrow \dfrac{i}{r} \cong \dfrac{c}{v}$ $r = \left(\dfrac{v}{c}\right) \times i = \left(\dfrac{5}{6}\right) \times 3 = 2,5°$
4	$mgh + m\,\dfrac{(v_0)^2}{2} = m\,\dfrac{v^2}{2}$ $v^2 = v_0^2 + 2 \times g \times h = 9 + 2 \times 10 \times 0,8 = 25 \rightarrow v = 5,0$ m/s
5	$V_p \times I_p = V_s \times I_s$ $I_p = \left(\dfrac{V_s}{V_p}\right) \times I_s = \left(\dfrac{10}{120}\right) \times 1,2 = 0,1$ A
6	$P = \dfrac{E}{t}$ $E = 2\,500$ kcal $= 10\,500$ kJ $t = 24 \times 3600$ s $P = \dfrac{10\,500 \times 10^3}{24 \times 3\,600} = 121,5$ W
7	$d = vt$ $d = \dfrac{80}{3,6} \times 9 = 200$ m
8	$\dfrac{O}{I} = \dfrac{P}{P'}$ $I = \dfrac{P'}{P} \times O = \dfrac{20}{3 \times 10^3} \times 3 = 20 \times 10^{-3}$ mm $= 20\,\mu$m
9	Pela lei de Boyle, $P_0 \times V_0 = P \times V$ $P_0 \times V_0 = P \times \dfrac{V_0}{2}$ $P = 2P_0 \Rightarrow \dfrac{P}{P_0} = 2$
10	$v = \lambda \times f$ $v = 220 \times 7 = 1\,540$ m/s