

Lämpchen wofür?

A1

geg. $P = 5W$
 $I = 0,33A$

ges: U

Lös: $P = U \cdot I \Rightarrow U = \frac{P}{I} = \frac{5W}{0,33A} = 15V$

passt zur Modelleisenbahn.

Projektor

A2

geg: $U_1 = 24V$
 $I_1 = 10,5A$

$U_2 = 230V$
 $I_2 = ?$; $P_2 = P_1$

Lös: $P_1 = U_1 \cdot I_1 = 24V \cdot 10,5A = 252W = P_2$

$P_2 = U_2 \cdot I_2 \Rightarrow I_2 = \frac{P_2}{U_2} = \frac{252W}{230V} = 1,1A$

Toaster

A3

geg: $U = 230V$
 $P = 800W$

ges: I , W_{el}

$t = 10 \text{ min}$

Lös: $P = U \cdot I \Rightarrow I = \frac{P}{U} = \frac{800W}{230V} = 3,48A \approx 3,5A$

$P = \frac{W}{t} \Rightarrow W = P \cdot t = 800W \cdot 10 \text{ min} =$
 $= 800W \cdot 600s = 480 \text{ kJ}$