

str. 131 / úloha 691

$$V = 200 \text{ l} = 0,2 \text{ m}^3$$

$$\Delta t = 1 \text{ min} = 60 \text{ s}$$

$$\Delta s = 30 \text{ m}$$

$$P_0 = ? \text{ [W]}$$

$$\eta = 65\% = 0,65$$

$$\rho = 1000 \frac{\text{kg}}{\text{m}^3}$$

$$g = 10 \frac{\text{N}}{\text{kg}}$$

$$\eta = \frac{P}{P_0}$$

$$P_0 = \frac{P}{\eta}$$

$$P_0 = \frac{1000}{0,65}$$

$$P_0 = 1538,5 \text{ W}$$

$$\underline{\underline{P_0 = 1,54 \text{ kW}}}$$

$$P = \frac{W}{\Delta t}$$

$$P = \frac{60000}{60}$$

$$\underline{\underline{P = 1000 \text{ W}}}$$

$$W = F \cdot \Delta s$$

$$W = 2000 \cdot 30$$

$$\underline{\underline{W = 60000 \text{ J}}}$$

$$F = m \cdot g$$

$$F = 200 \cdot 10$$

$$\underline{\underline{F = 2000 \text{ N}}}$$

$$m = \rho \cdot V$$

$$m = 1000 \cdot 0,2$$

$$\underline{\underline{m = 200 \text{ kg}}}$$

Príkón čerpadla je 1,54 kW.