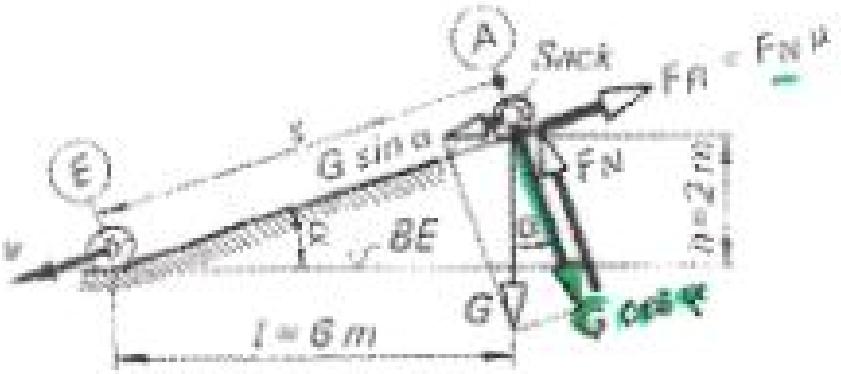
ad 3.6 Aufgaben zum Energieerhaltungssatz

ad Lösung 11:



$$E_E = E_A - W_{AB}$$

$$E_{kin} = E_{pot} - W_R$$

$$\frac{1}{2} m v^2 = m g h - F_R \cdot s \qquad F_R = \mu \cdot F_N \qquad s = \frac{l}{\cos\alpha}$$

$$\frac{1}{2} \not{m} v^2 = \not{m} g h - \mu \cdot \not{m} \cdot g \cdot \cos\alpha \cdot s$$

$$\frac{v^2}{2} = g h - g \mu \cdot \cos\alpha \cdot \frac{l}{\cos\alpha}$$

$$v^2 = 2g(h - \mu l)$$

$$v = \sqrt{2g(h - \mu l)}$$

$$v = \sqrt{2 \cdot 9{,}81 \frac{m}{s^2} (2m - 0{,}3 \cdot 6m)}$$

$$v = 1{,}98 \frac{m}{s}$$