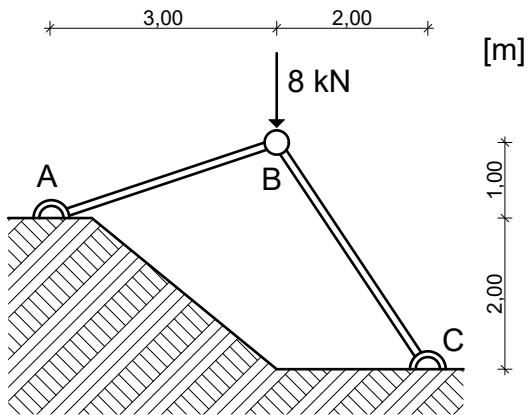


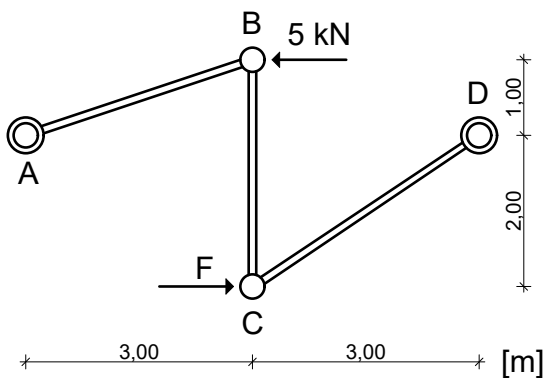
Statics practice problems



What are the forces in the bars? Are they under compression or tension?

$$S_{AB} = 4,6 \text{ kN (compression)}$$

$$S_{BC} = 7,867 \text{ kN (compression)}$$



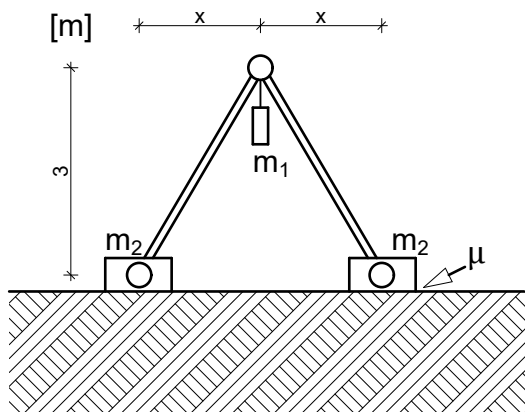
Determine F such that the mechanism is NOT accelerating! What are the bar forces?

$$F = 2,5 \text{ kN}$$

$$S_{AB} = 2,27 \text{ kN}$$

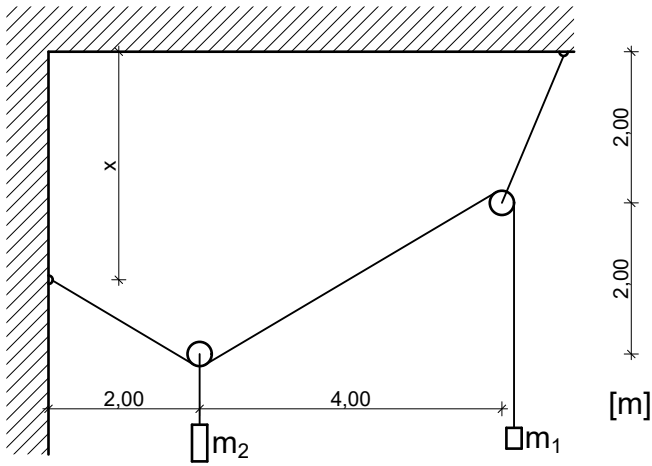
$$S_{BC} = 1,666 \text{ kN}$$

$$S_{CD} = 3 \text{ kN}$$



What is the maximum value of x if $m_1 = 7 \text{ kg}$, $m_2 = 9 \text{ kg}$ and the coefficient of static friction is $\mu = 0,4$.

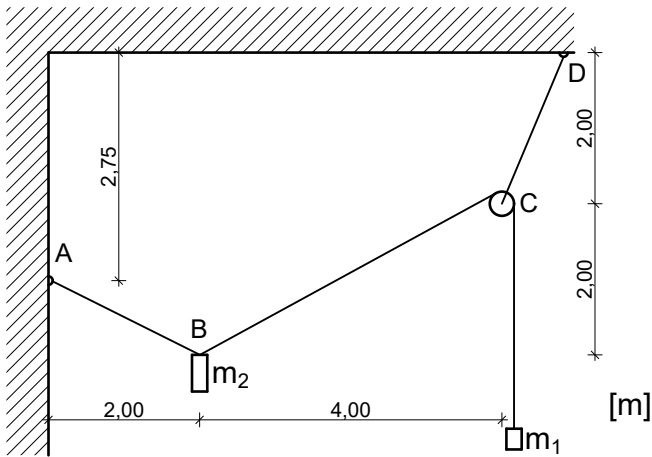
$$x = 4,286 \text{ m}$$



We know that $m_1=12$ kg. Determine x and m_2 such that the system is in equilibrium!

$$x=3 \text{ m}$$

$$m_2=10.73 \text{ kg}$$



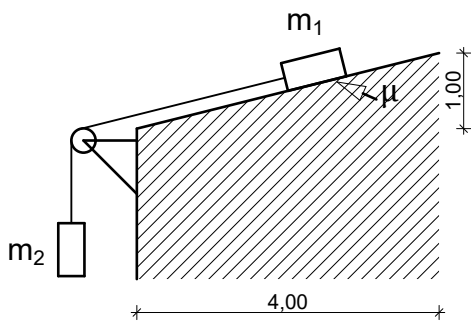
We know that $m_1=12$ kg. Determine m_2 such that the system is in equilibrium! What are the forces in strings AB, BC and CD?

$$m_2=6,71 \text{ kg}$$

$$S_{AB}=126,57 \text{ N}$$

$$S_{BC}=120 \text{ N}$$

$$S_{CD}=204,16 \text{ N}$$



We know that $m_1=12$ kg and the coefficient of static friction is $\mu=0.3$. What is the maximum mass (m_2) this system can support?

$$m_2=0,5825 \text{ kg}$$