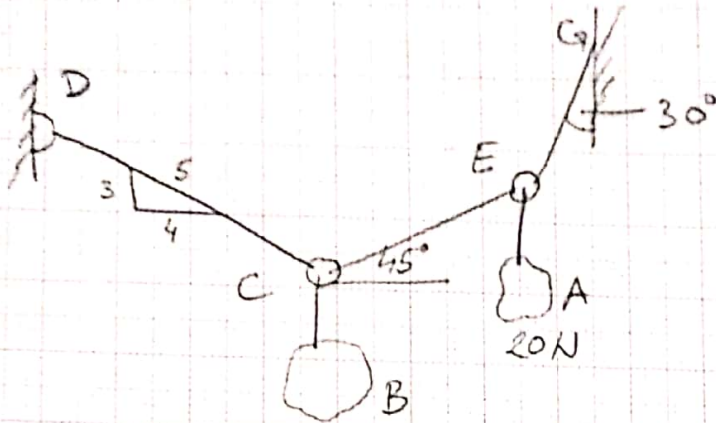
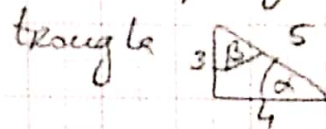


V nodelfa

Zadatak 1. Odeđiti težinu težišta B da bi sistem na slici bio u ravnoteži.



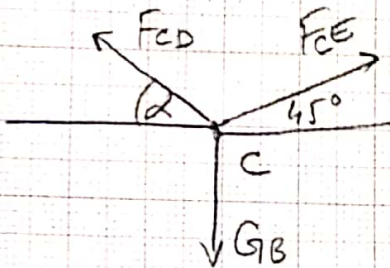
Određivanje ugla α



$$\sin \alpha = \frac{3}{5}$$

$$\cos \alpha = \frac{4}{5}$$

I podsystem
(sučelje je tačka C)



$$\sum X_i = 0 \quad F_{CE} \cdot \cos 45^\circ - F_{CD} \cos \alpha = 0$$

$$F_{CE} \cdot \frac{\sqrt{2}}{2} = F_{CD} \cdot \frac{4}{5}$$

$$F_{CD} = F_{CE} \cdot \frac{\sqrt{2}}{2} \cdot \frac{5}{4}$$

$$F_{CD} = F_{CE} \cdot \frac{5\sqrt{2}}{8}$$

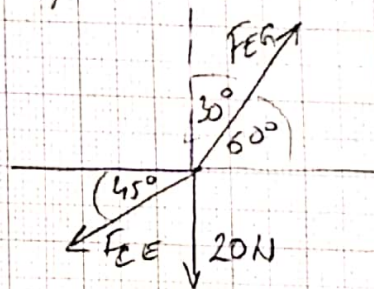
$$\sum Y_i = 0 \quad F_{CE} \cdot \sin 45^\circ + F_{CD} \cdot \sin \alpha - G_B = 0$$

$$G_B = F_{CE} \cdot \frac{\sqrt{2}}{2} + \frac{3}{5} F_{CD}$$

$$F_{CD} = 34,1 \text{ N}$$

$$G_B = 27,3 + 20,46 \quad G_B = 47,8$$

II podsystem (sučelje je tačka E)



$$\sum X_i = 0 \quad F_{EG} \cdot \cos 60^\circ - F_{EE} \cos 45^\circ = 0$$

$$F_{EG} \cdot \frac{1}{2} = F_{EE} \cdot \frac{\sqrt{2}}{2} / 2$$

$$F_{EG} = \sqrt{2} F_{EE}$$

$$\sum Y_i = 0 \quad F_{EG} \cdot \sin 60^\circ - F_{EE} \cdot \sin 45^\circ - 20 = 0$$

$$F_{EG} \cdot \frac{\sqrt{3}}{2} - F_{EE} \cdot \frac{\sqrt{2}}{2} = 20 / 2$$

$$\sqrt{3} F_{EG} - \sqrt{2} F_{EE} = 40$$

$$\sqrt{3} \cdot \sqrt{2} F_{EE} - \sqrt{2} F_{EE} = 40$$

$$F_{EE} (\sqrt{6} - \sqrt{2}) = 40$$

$$F_{EE} = 38,6 \text{ N}$$

$$F_{EG} = 54,64 \text{ N}$$