1. Zadatak
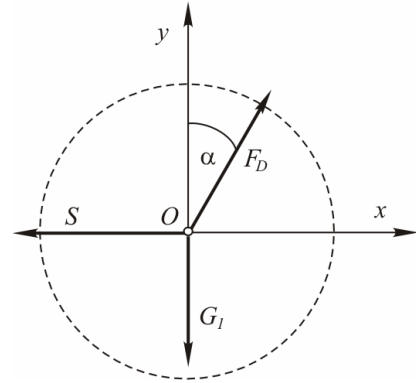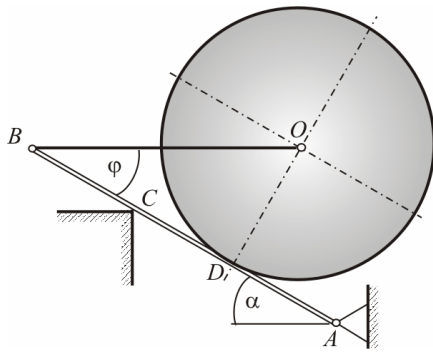

$\overline{AD} = \overline{DC} = \overline{CB} = a$

$\text{tg}\,\varphi = \dfrac{\overline{OD}}{\overline{BD}} = \dfrac{R}{2a} = \dfrac{\sqrt{3}}{3}$

$\varphi = 30° = \alpha$
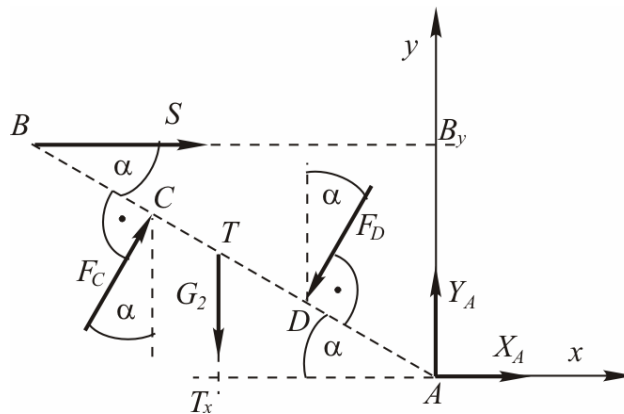
$\sum X_i = 0; \quad -S + F_D \sin \alpha = 0;$

$\sum Y_i = 0; \quad -G_1 + F_D \cos \alpha = 0;$

$S = \sqrt{3}G; \; F_D = 2\sqrt{3}G;$

$\overline{AT_x} = \dfrac{3a}{2}\cos \alpha$

$\overline{AB_y} = 3a \sin \alpha$

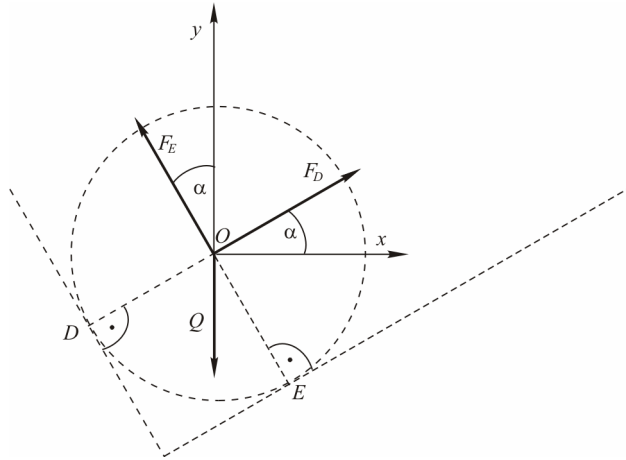$\sum X_i = 0; \quad X_A - F_D \sin \alpha + F_C \sin \alpha + S = 0;$

$\sum Y_i = 0; \quad Y_A - F_D \cos \alpha - G_2 + F_C \cos \alpha = 0;$

$\sum M_A = 0; \quad F_D a + G_2 \overline{AT_x} - F_C 2a - S\,\overline{AB_y} = 0;$

$X_A = -\dfrac{\sqrt{3}}{2}G; \; Y_A = \dfrac{7}{2}G; \; F_C = \sqrt{3}G;$

2. Zadatak
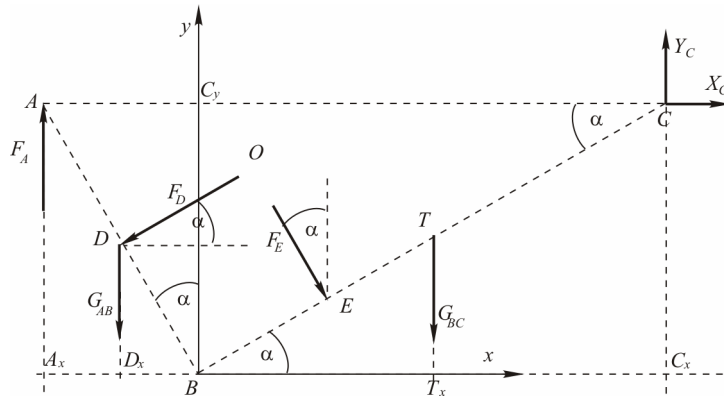

$$\sum X_i = 0; \quad F_D \cos\alpha - F_E \sin\alpha = 0 \, ;$$
$$\sum Y_i = 0; \quad F_D \sin\alpha + F_E \cos\alpha - Q = 0;$$

$$F_D = \frac{7\sqrt{3}}{2}\,G; \quad F_E = \frac{21}{2}\,G;$$

$$\overline{AD} = \overline{BD} = \frac{\overline{AD}}{2} = R;$$
$$\overline{BE} = R;$$
$$\overline{BT} = \overline{TC} = \frac{\overline{BC}}{2} = \sqrt{3}R;$$
$$\overline{BA_x} = \overline{BA}\sin\alpha \, ;$$
$$\overline{BD_x} = \overline{BD}\sin\alpha;$$
$$\overline{BT_x} = \overline{BT}\cos\alpha \, ;$$
$$\overline{BC_x} = \overline{BC}\cos\alpha;$$
$$\overline{BC_y} = \overline{BC}\sin\alpha;$$

$$\sum X_i = 0; \quad X_C + F_E \sin\alpha - F_D \cos\alpha = 0;$$
$$\sum Y_i = 0; \quad Y_C - G_{BC} - F_E \cos\alpha - G_{AB} + F_D \sin\alpha + F_A = 0;$$
$$\sum M_B = 0; \quad - F_A \overline{BA_x} + F_D R + G_{AB}\overline{BD_x} - F_E R - G_{AB}\,\overline{BT_x} - X_C\,\overline{BC_x} + Y_C\,\overline{BC_y} = 0;$$

$$X_C = 0; \; Y_C = \left(7 + \sqrt{3}\right)G; \; F_A = 7\sqrt{3}G;$$