4.70 $S_{AD} = 377$ N, $S_{BE} = 533$ N, $S_{BF} = 267$ N.

4.71 $S_1 = -4$ kN, $S_2 = -1{,}845$, $S_3 = 8{,}309$ kN, $F_{Dx} = -8$ kN, $F_{Dy} = 6$ kN, $F_D = 10$ kN, $F_E = 8$ kN.

5 UVJETI RAVNOTEŽE TIJELA KADA DJELUJE TRENJE

5.1 $F_g \cdot \dfrac{\sin(\alpha-\varphi_s)}{\cos(\beta+\varphi_s)} \le Q \le F_g \cdot \dfrac{\sin(\alpha+\varphi_s)}{\cos(\beta-\varphi_s)}$, $1{,}892\ \text{kN} \le Q \le 2{,}472\ \text{kN}$.

5.2 $Q = F_g \cdot \dfrac{\cos\alpha + \mu_{s1}\cdot\sin\alpha}{\mu_{s1}\cdot e^{\mu_{s2}\cdot\widehat{\beta}}} = 248$ N, gdje je $\widehat{\beta} = \dfrac{2}{3}\pi$.

5.3 $F_g = 211{,}3$ N.

5.4 $F = \mu_s \cdot \left(\dfrac{2Q}{1-\mu_s} + F_g\right)$.

5.5 $Q_{max} = 406{,}6$ N.

5.6 $Q_A \le 544$ N.

5.7 $x \le a \cdot \dfrac{F+Q}{F} \cdot \dfrac{e^{\mu_s\widehat{\alpha}}-1}{e^{\mu_s\widehat{\alpha}}+1}$, $x \le 0{,}35$ m. Za $F = Q$: $x = 0{,}4$ m.

5.8 $F = Q \cdot \dfrac{1-2\mu_{s1}}{e^{\mu_{s2}\widehat{\alpha}}}$, $F \approx 0{,}243Q$, $S_{CD} = Q\cdot(1-3\mu_{s1}) = 0{,}1Q$.

5.9 $F = \dfrac{\mathcal{M}}{r} \cdot \dfrac{a_2 - a_1\cdot e^{\mu\widehat{\alpha}}}{l\cdot\left(e^{\mu\widehat{\alpha}}-1\right)}$.

5.10 $\alpha = \arccos\left(\dfrac{Q_A}{Q_C}\cdot\sin\varphi_s\right) - \varphi_s$, $\alpha = 29{,}45°$.

5.11 $Q_A = Q_B \cdot \cos(\alpha+\varphi_s)\cdot\dfrac{\sin(\alpha-\varphi_s)}{\sin 2\varphi_s} = 67{,}2$ N.

5.12 $\alpha \le \arctan\left[\mu_s\left(1+\dfrac{2Q_B}{Q_A}\right)\right]$, $\alpha = \arctan 0{,}5 = 26{,}565°$,

$F_S = Q_B \cdot \dfrac{\sin(\alpha+\varphi_s)}{\cos\varphi_s}$, $F_S = 33{,}54$ N.

5.13 $\mu_s = \dfrac{(Q+F_g/2)}{Q_1}\cdot\tan\alpha$, $\quad \mu_s = 0{,}433$.

5.14 $F_C = \dfrac{Q+Q_1}{\mu_s\cdot\sin(\alpha-\varphi_s)+\cos(\alpha-\varphi_s)}$, $F_C = 393{,}2$ N, $F_A = F_C \cdot \dfrac{\sin(\alpha-\varphi_s)}{\cos\varphi_s}$,

$F_A = 105{,}5$ N, $\alpha = 26{,}565°$, $\overline{AB} = \dfrac{2F_C\cdot a\cdot\cos\varphi_s}{(Q_1+Q/2)\cdot\sin 2\alpha}$, $\overline{AB} = 7$ m.