$mg - 2N\cos\beta = 0$ – for the first cylinder

For the second cylinder :

$OY : mg + N\cos\beta - N_0\cos\theta = 0$

$OX : N_1 + N\sin\beta - N_0\sin\theta = 0$

$\beta = 30^0$

When the system start to destroyed $N_1 = 0$

From the first equation: $\dfrac{mg}{2\cos\beta} = N$

From the second equation: $N_0 = \dfrac{3mg}{2\cos\theta}$

So, in the third equation we have:

$$\dfrac{mg}{2}tg\beta - \dfrac{3mg}{2}tg\theta = 0$$

$$tg\beta = tg\,30^0 = \dfrac{1}{\sqrt{3}}$$

$$\Rightarrow tg\theta = \dfrac{1}{3\sqrt{3}}$$

$$\theta = arctg\left(\dfrac{1}{3\sqrt{3}}\right) \longrightarrow \text{Answer}$$