3. Sticky ball (4 points) — *Jaan Kalda.*

A glass ball of radius R rests on a flat glass plate. A tiny droplet of water (of surface tension σ) is injected with a syringe so that water forms a small thin neck between the ball and the plate. Both the ball and the plate are perfectly hydrophilic, i.e. the contact angle of water is $0°$. Find the increase of the normal force between the plate and the ball caused by the presence of the neck of water.