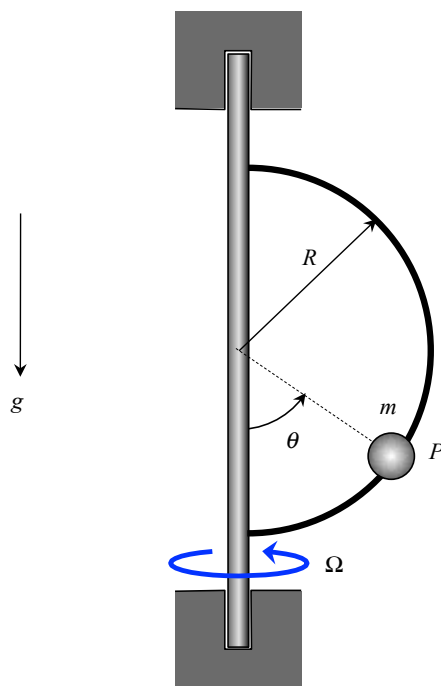**Homework 4.A.17**

Given: A rigid semi-circular guide of radius R is attached to a vertical shaft, with the shaft rotating with a constant rate of Ω. Particle P (of mass m) is able to slide on the guide.

Find: If the guide is smooth, determine the angle θ at which the particle will not slide on the guide.

Please leave your answer in terms of, at most, g, m, R and Ω.