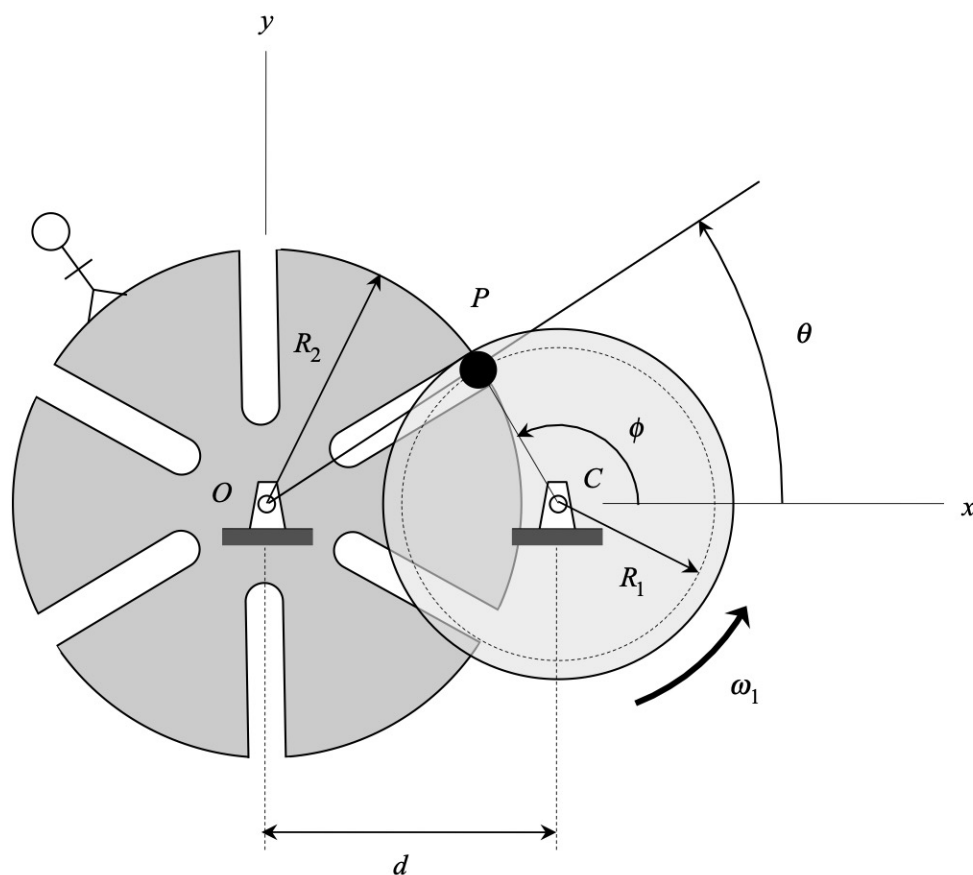


Homework H.3.D

Given: A “Geneva mechanism” is made up of a slotted wheel (on the left) and a disk (on the right), with the wheel and disk having parallel axes. Pin P on the disk is able to slide in a slot in the slotted wheel as the disk turns. The disk is given a constant counter-clockwise rotation rate of ω_1 . For the position shown, it is known that $\theta = 30^\circ$ and $\phi = 120^\circ$. An observer also attached to the slotted wheel.

Find: For this problem:

- Determine the angular velocity and angular acceleration of the slotted disk for the position shown. Write your answers as vectors.
- Determine the angular velocity and angular acceleration of the slotted disk for the position corresponding to $\phi = 150^\circ$. Write your answers as vectors.



Use the following parameters in your analysis: $R_1 = 2$ in, $d = 4$ in and $\omega_1 = 6$ rad/s.