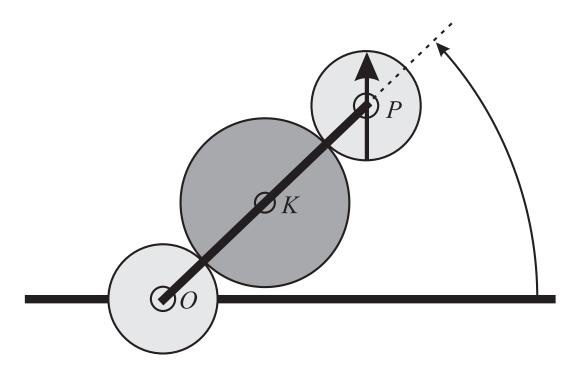# Mekanik II M2, 5C1140

# Hand in assignment 2, HT 2004

Three cog-wheels are connected as shown in the figure. The wheel with center at the fixed point $O$ has radius $R_O$ and is fixed so that it can't rotate. A second wheel of radius $R_K$ can roll on the fixed wheel and a third cog-wheel of radius $R_P$ can roll on the second wheel. The centers of the three wheels are connected by an arm which keep them on a straight line at fixed distances (so that they always touch). When the arm is rotated an arrow painted on the outermost (third) wheel is required to point upwards at all times. What relation between the radii $R_O$, $R_K$, and $R_P$ must hold if this is to be the case?



The solutions, which must have explanative *text* in English, are intended to start from general laws and definitions. All essential steps in the calculations must be included.

Mark the solutions with your *name* and number as well as *my name* (Hanno Essén). They must be *tidy* and easy to read, as well as correct.

The last day for handing in this assignment is Friday, September 17.