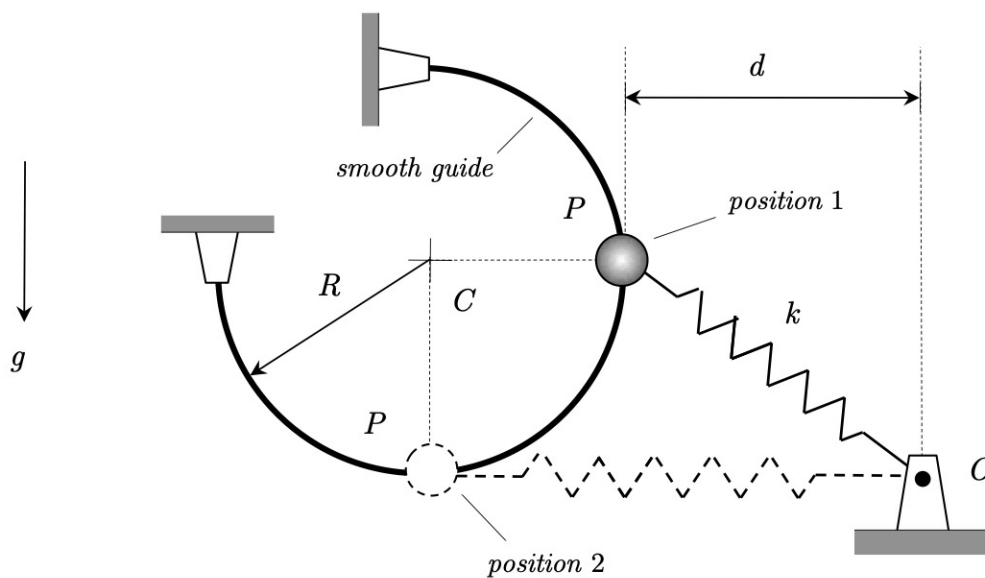


Homework H.4.I

Given: Particle P (of mass m) is constrained to move along a smooth circular guide (of radius R). A spring of stiffness k is attached between P and the fixed point O, where O is on the same horizontal line as the bottom of the circular guide, as shown in the figure. At position 1, P is at rest and is on the same horizontal line as the center of the guide C. At position 2, P is on the same horizontal line as O and the spring is unstretched.

Find: Determine the speed of particle P at position 2.



Use the following parameters in your analysis: $m = 50$ kg, $R = 0.6$ m, $d = 0.8$ m and $k = 500$ N/m.