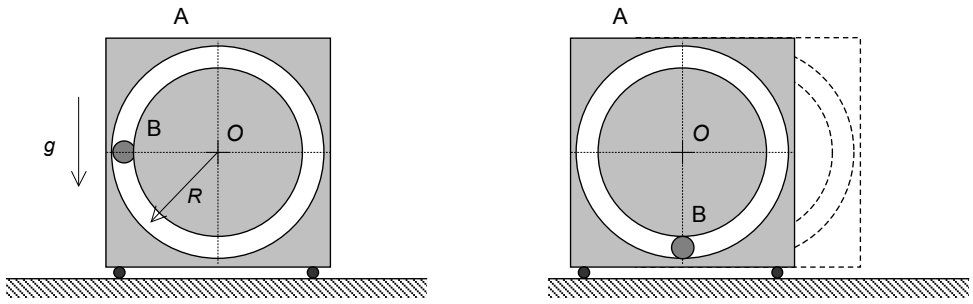
Homework H4.M

Given: Particle B (having a mass of m) is constrained to move within a circular slot (of radius R) that is cut into block A (having a mass of M). The system is released from rest with particle B on a horizontal line passing through the circle's center O. Consider all surfaces to be smooth.

Find: For this problem:
(a) Determine the velocities of A and B when B has moved position 2 where B is directly below O (write your answers as vectors);
(b) Determine the work done on block A in moving from position 1 to position 2.



Position 1 ***Position 2***

Use the following parameters in your analysis: $m = 30$ kg, $M = 50$ kg and $R = 0.5$ m.