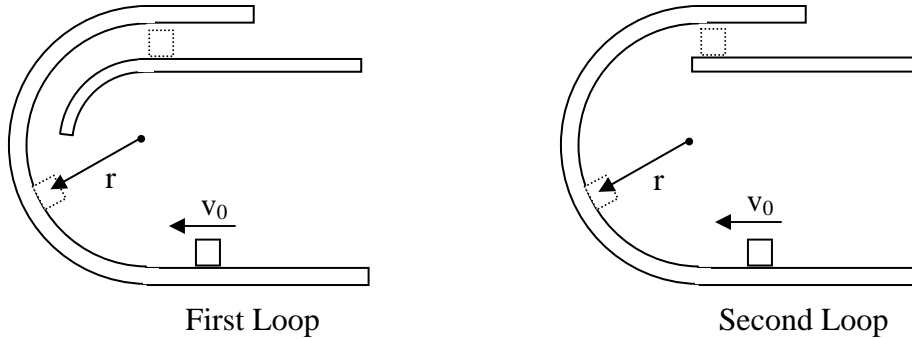


Homework (LE 3)

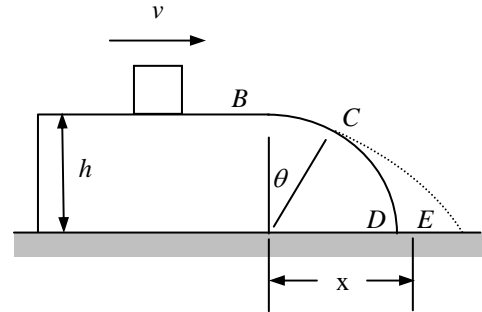
Problem 3.1 (new)

It is desired to have the package shown deposited on the horizontal surface with a speed of 1.5 m/s. Knowing that $r = 0.3$ m, (a) determine the required initial speed v_0 when the first loop is used, (b) show that this requirement cannot be fulfilled by the second loop, (c) determine the smallest v_0 so that the package will be deposited on the horizontal surface when the second loop is used.



Problem 3.3 (3.7 in the text)

A small block slides at a speed $v = 8$ ft/s on a horizontal surface at a height $h = 3$ ft above the ground. Determine a) the angle θ at which it will leave the cylindrical surface BCD and b) the distance x at which it will hit the ground. Neglect friction and air resistance.



Problem 3.3 (new)

A 3-lb collar is attached to a spring and slides without friction along a circular rod in a horizontal plane. The spring has an undeformed length of 6 in. and a constant $k = 1.5$ lb/in. Knowing that the collar is in equilibrium at A and is given a slight push to get it moving, determine the velocity of the collar (a) as it passes through B , (b) as it passes through C , (c) the normal force between the rod and the collar at C .

