**55**

· (II) A small lead ball of mass 2 kg is suspended at the end of a light string 1 m in length. A small peg, 0.5 m below the suspension point, catches the string in its swing (Fig. 13–30). The ball is set swinging through small angles. (a) What is the period of this pendulum? (b) The ball is started swinging on the side that does not catch the peg, at an initial height 0.05 m above the low point. How high does it rise on the side where the peg restricts the pendulum length to 0.5 m?
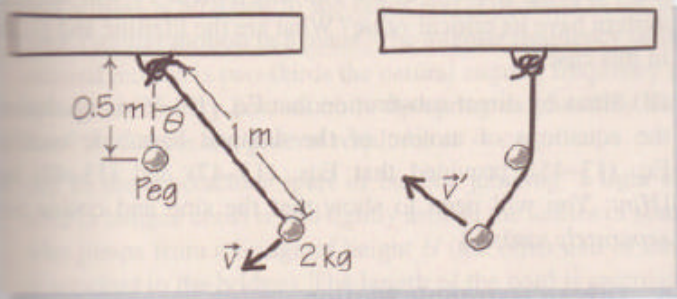

▲ **FIGURE 13–30** Problem 55.

59

· (I) A student wants to build a pendulum out of a circle of plywood as shown in Fig. 13–31. The circle has a radius of $R = 10$ cm and the plywood has a mass of 200 g. What is the period of the motion?
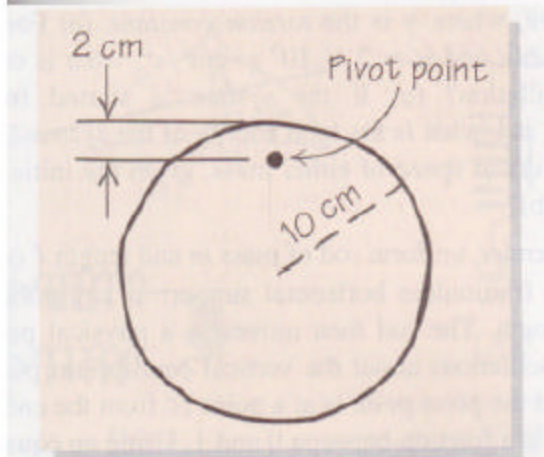
▲ **FIGURE 13–31** Problem 59.

75) a spring with k = 12 n/m and an attached bob oscillates in a viscious medium. a given maximum of +6.0 cm from the equilibrium, is boserved at t=1.5 s, and the next max., of +5.6 cm, occurs at t=2.5 s. what will the position of the bob be at 3.0 s and at 4.8 s? what is its position at t+0 s.

▲ FIGURE 13–33 Problem 75.
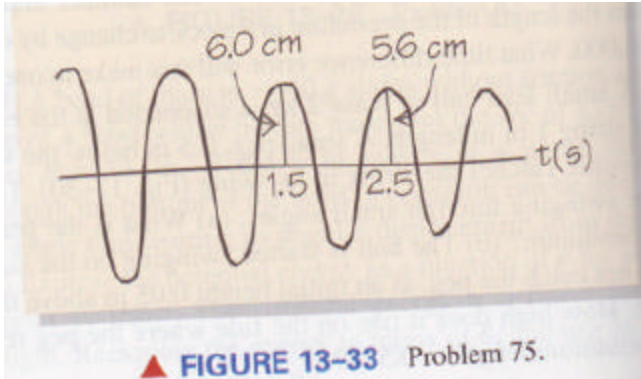
79) a mss of 0.5 kg is suspened from a spring, which stretches by 8 cm. the support from which the spring is suspended is set into siusoidal motion. with what frequency should the tip be tapped to make the strip oscillate with the maximum amplitude?