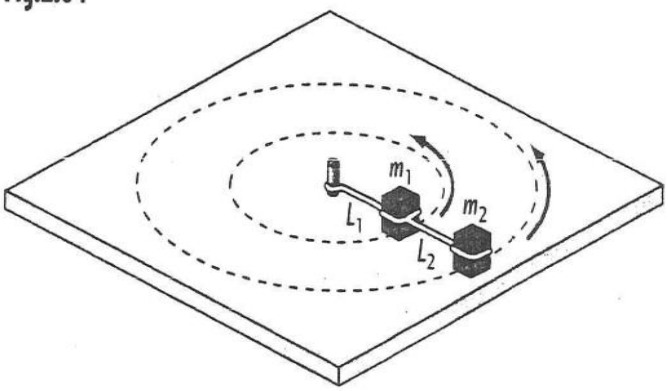
Circular Motion Problem

Name: _____ Date: _____

A block of mass m_1=3kg is attached to a rope of length L_1=8cm, which is fixed at one end to a table. The mass moves in a horizontal circle supported by a frictionless table. A second block of mass m_2=6kg is attached to the first mass by a rope of length L_2=10cm. The mass also moves in a circle, as shown in *Figure 2.64*. If the masses take 5 seconds to make 2 revolutions, calculate the tension in each rope (try and get a general solution before putting in the numbers, also assume all ropes are massless).

Fig.2.64



[ANS: $T_1 = 8.33N$, $T_2 = 6.81N$]