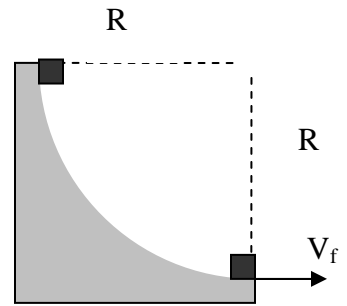


# Help Session 2- (Fuad Enaya) 27/10/2004

## Ch 7&8

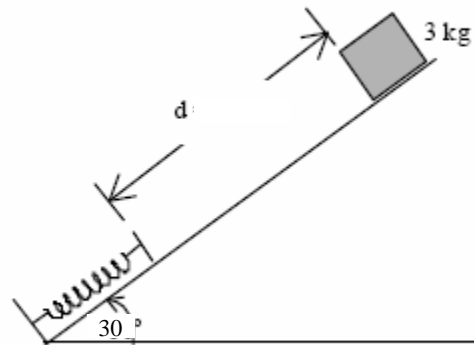
11- A block of mass 2.0 kg is released from rest and slides down a rough track of radius  $R = 1.0$  m, as shown in the Fig. If the speed of the block at the bottom is 4.0 m/s, What is the energy dissipated by the frictional force acting on the block?

*[Correct Answer 3.6 J]*



13- A 3-kg block starts at rest and slides a distance  $d$  down a smooth 30-deg Incline, where it contacts a spring of negligible mass, as shown in the Fig. It slides an additional 0.2 m as it is brought momentarily to rest by compressing the spring. The force constant of the spring is 400 N/m. Find the initial separation  $d$  between the mass and the spring.

*[Correct Answer 0.344 m]*



14- A spring of force constant 100 N/m rests on an inclined plane that has the same length as the spring. The inclined plane makes an angle of 45 deg with the horizontal. A block of mass 0.1 kg is pressed against the spring, compressing it a distance of 0.2 m, and then released. Find the maximum height the block reaches above the point at which it leaves the spring. [ $Y_{\max} = V_0^2 \sin^2 \theta_0 / (2g)$ ]

*[Correct Answer 0.95 m]*

*Good Luck*