



## Conservation of Energy

---

5. A mass is released from a height  $H$  on an inclined plane with base angle  $50^\circ$  and coefficient of friction of 0.25. The mass slides down the incline, and then onto a flat frictionless track with a loop-the-loop of radius 15 cm. What must be the minimum height  $H$  so that the mass just barely makes the loop-the-loop?
6. A 50 gram mass is attached to a spring. The spring is compressed 9 cm. The mass and spring are on a horizontal table, and there is a coefficient of friction of 0.3 between the mass and the table. The spring is released, and the mass slides a total of 24 cm before stopping. What was the spring constant of the spring?

Answers:      4. a) 36.2 m/s    b) 328 m      5) 0.48 m      6) 8.9 N/m