Problems discussed in "Conservation of Mechanical Energy"

0:00:40
A 3kg object is released at the top a 5m high, frictionless slope. How fast is the object moving when it reaches the bottom of the slope?

0:42:40
A 3kg object is attached to a 12m long pendulum and released from 7m below the ceiling. How fast is the pendulum moving when it reaches the vertical position?

0:56:10
An object is moving 8m/s right when it reaches the bottom of a frictionless hill. What vertical height does the object reach on the hill?

1:04:50
A pendulum is moving 8m/s right when it passes through the vertical position. What vertical height does the pendulum reach as it's swing continues?

1:28:40
A spring with spring constant 2 N/m is compressed 3m. A 4kg object is then placed against the spring, and the spring is released. How fast is the object moving when it moves away from the spring? Assume no friction.

1:39:10
A 5kg object is moving 4 m/s right when it hits a frictionless spring with spring constant 10 N/m. How far does the spring compress?