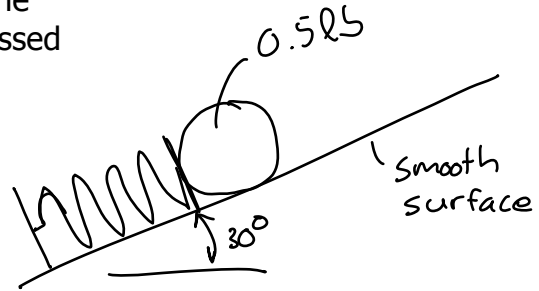


## Kinetics of a Particle: Conservation of Energy

**Problem Statement:** If the spring is initially compressed 2 inches, determine the smallest stiffness,  $k$ , to shoot the ball a max distance of 30 inches if the spring is compressed an additional 3 inches and is released from rest.



- 1.) Draw the Free-Body Diagram if needed.
- 2.) Define the datum.
- 3.) Determine the kinetic and potential energy, and work.
- 4.) Solve for the unknowns.