Work and Energy

PHYS 2425

Phil Alcorn

October 2, 2025

1. Prolems

1. A block of mass m_1 is resting on top of another block of mass m_2. To cause the top block to slip on the bottom one while the bottom block is held fixed, a force of at least $\vec{F}$ must be applied to the top block. These blocks are placed on a table with coefficient of friction μ. What is the maximum horizontal force, $\vec{J}$, that can be applied to the lower block without the top block slipping.

2. A block of mass m is resting on a hill at angle θ. It falls a distance L down the hill before hitting a spring at rest with spring constant k. What distance x does the spring constant get compressed by? Assume no friction.