

Problem 13.3.4.4: A suitcase is pulled 50ft along a horizontal sidewalk with a constant force of 30lb at an angle of 30° above the horizontal. How much work is done?

Modified Problem 13.3.4.46: A constant force of $\vec{F} = \langle 2, 4, 1 \rangle \text{N}$ moves an object from $(0, 0, 1)\text{m}$ to $(2, 4, 6)\text{m}$. How much work is done?

Modified Problem 13.3.4.50: An object on an inclined plane does not slide provided the component of the object's weight parallel to the plane $|\vec{W}_{\text{par}}|$ is less than or equal to the magnitude of the opposing frictional force $|\vec{F}_f|$. The magnitude of the frictional force, in turn, is proportional to the component of the object's weight perpendicular to the plane $|\vec{W}_{\text{perp}}|$. The constant of proportionality is the coefficient of static friction $\mu > 0$. Suppose a 100lb block rests on a plane that is tilted at an angle of $\theta = 30^\circ$ to the horizontal. What is the smallest possible value of μ ?

