Worksheet 9: Work

Objective

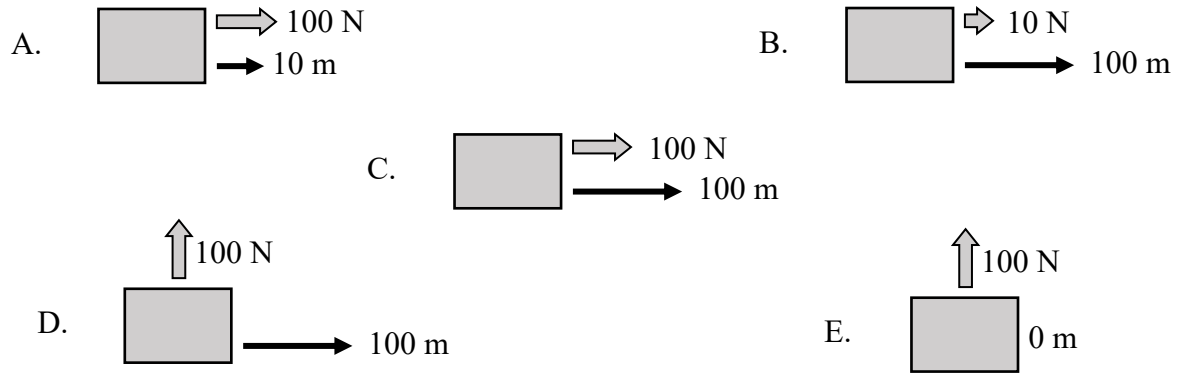
- Evaluate the work done by a force.

Summary

$W = \vec{F} \cdot d\vec{s}$, where $\vec{F}$ is applied force and $\vec{s}$ is the displacement of the object acted on by $\vec{F}$.

Problems

1. Rank the following scenarios from least work done to most work done.



Ranking: _____

2. A luggage handler at the Laramie Airport pulls a 20-kg suitcase from rest up a ramp inclined at 25° above the horizontal with a force of 140 N parallel to the ramp. The coefficient of kinetic friction between the ramp and the box is $\mu_k = 0.30$. The suitcase travels 3.80 m along the ramp. Find:

   a. the work done on the suitcase by the handler

   b. the work done on the suitcase by gravity

   c. the work done on the suitcase by the normal force

   d. the work done on the suitcase by friction

   e. the total work done on the suitcase

   f. the final speed of the suitcase