

## Work Part II's

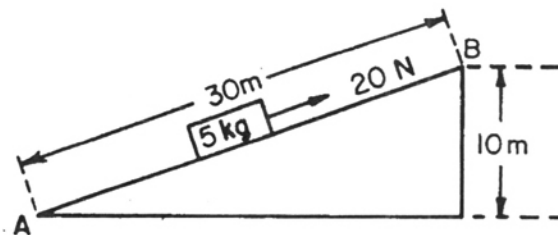
1. A constant force of 1900 newtons is required to keep an automobile having a mass of  $1.0 \times 10^3$  kilograms moving at a constant speed of 20. meters per second. The work done in moving the automobile a distance of  $2.0 \times 10^3$  meters is

2. How much work is done on a downhill skier by an average braking force of  $9.8 \times 10^2$  newtons to stop her in a distance of 10. meters?

3. A 500.-newton girl lifts a 10.-newton box vertically upward a distance of 0.50 meter. The work done on the box is

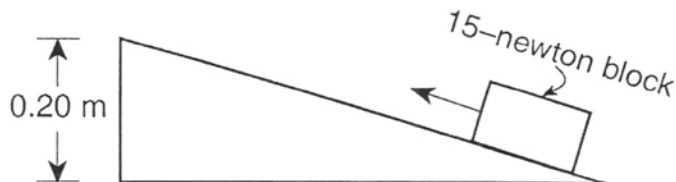
4. A student does 300. joules of work pushing a cart 3.0 meters due east and then does 400. joules of work pushing the cart 4.0 meters due north. The total amount of work done by the student is

5. Base your answer to the following question on the diagram below which shows a 20-newton force pulling an object up a hill at a constant rate of 2 meters per second.



The work done by the force in pulling the object from *A* to *B* is

6. A block weighing 15 newtons is pulled to the top of an incline that is 0.20 meter above the ground, as shown below.



If 4.0 joules of work are needed to pull the block the full length of the incline, how much work is done against friction?

7. A box is dragged up an incline a distance of 8 meters with a force of 50 Newtons. If the increase in potential energy of the box is 300 joules, the work done against friction is