Work Practice Sheet

1. **Is the person doing work? Give reasoning for your answer.**

   a. When pushing a 1000 N car 10 m. Yes

   Therefore   with <u>force</u> the car moves a set <u>distance.</u>

   b. Lifting a rock off the ground.

   Yes, traveled distance up.

   c. Holding a book in your hands.

   No, no distance traveled.

   d. Pushing hard on a brick wall.

   No, no distance traveled

Directions: Use the formula W = F x D to solve the following problems. Show work and use proper units.

2. How much work is done when a 5 N force moves a block 4 m?

   5 x 4 = 20 Joules

3. How much work is done when a 100 N force moves a block 59 m?

   100 x 59 = 5900 J

4. Fred applies 350 N of force to move his stalled car 40 m, how much work did Fred do?

   350 x 40 = 14000 J

5. You move a 25 N object 5 m. How much work did you do?

   125 J

6. You carry a 20 N bag of dog food up a 6 m flight of stairs. How much work did you do?

   120 J

7. How much energy do you give a 200N couch if you push it 35 meters?

   200 N x 35 m = 7000 J

8. How much energy do you give a sumo wrestler if you push him with all your might (150N worth of force) for 1 hour and he does not move at all?

   150 N x 0 = 0 J

9. Which is more work, pushing with 115 N over 15 m or lifting 20 N 10 m?

   115 x 15 = 1725 J → pushing is more work

   20 x 10 = 200 J

Consider a 10 kg mass sitting on the ramp shown below then use the following diagram for question 10-11

20m   Distance of Effort
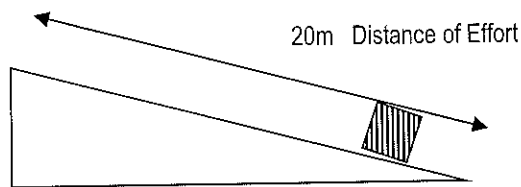
10. If it takes 25 N of force to slide the box on the ramp, how much work will it take to slide the box up the ramp?
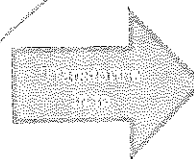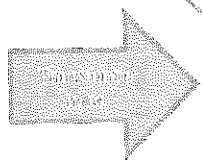
$25 \times 20 = \boxed{500\ N}$

11. Make the ETD for the three phases of energy transfer detailed below...

The person has their hands on the box at the bottom of the ramp and is ready to push

The person is moving the block up the ramp

The block sits at the top of the ramp

Omit

"The greatest weapon against stress is our ability to choose one thought over another." –
William James