Name _____ Date _____ Period ____

1. What is work? _____

_____

2. Which of the following situations describe work being done?
   a. a grocery bag as you lift it up
   b. a crane moving dirt
   c. a crate as you push it along the floor
   d. a person sitting on a bench

3. Work is done on a ball when a pitcher throws it. Is the pitcher still doing work on the ball as it flies through the air? Explain. _____

_____

_____

4. Amy uses 20N of force to push a lawn mower 10 meters. How much work does she do?

5. A 900N mountain climber scales a 100m cliff. How much work is done by the mountain climber?

6. Tommy does 15 Joules of work to push the pencil over 1 meter. How much force did he use?

7. Angela uses a force of 25 Newtons to lift her grocery bag while doing 50 Joules of work. How far did she lift the grocery bags?

8. You lift a chair that weighs 50N to a height of 0.5m and then carry it 10m across the room. How much work do you do on the chair?

9. How are work and power related? _____

_____

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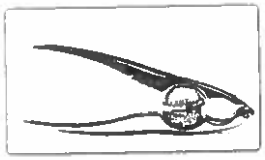
10. Your laundry basket weighs 22N and your room is 3m above you on the second floor. It takes you 5 seconds to carry the laundry basket up. What is your POWER?

11. A student who weighs 500 newtons climbed the stairs from the first floor to the third floor, 15 meters above, in 20 seconds. What was her power?

12. What is a machine? _____

_____

13. Identify the type of simple machine shown by each of the pictures below.

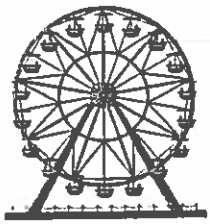


Nutcracker

_____

Well

_____

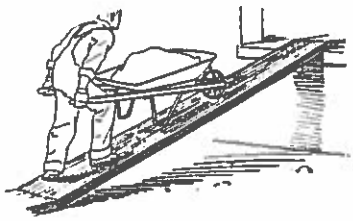


Ferris Wheel

_____

Hammer removing nail

_____



Ramp

_____

14. If a machine has an input force of 40N and an output force of 80N, what is its mechanical advantage?

15. The mechanical advantage of a machine is 3. If you exert an input force of 5N, what output force is exerted by the machine?