Chapter 13.1-13.2 Study Guide - PS

13.1-13.2 SG – PS

1. Machines help do work by
   a. _____
   b. _____
2. What is the mechanical advantage for an incline plane?

3. What is the difference between science work and "normal" work?

4. What is a lever?

5. What is a fulcrum?

6. What is the output force of a machine that has a MA of 3.2 and a 19 N input force is applied?

7. What is the work equation?

8. How much power is required to perform 600 J of work in 30 seconds?

9. What are the 2 families of simple machines AND which simple machines are in each family?

10. What are the SI units for Watts?

11. How many classes of levers are there and what are their names?

12. What happens to the amount of work done if you double the Force?

13. What is the MA for a teeter-totter that lifts a box 3.0 meters when you push the other side down 1.6 meters?

14. What happens to the amount of work done if you ½ the Force?

15. What is a cmpd machine?

16. What happens to the amount of work done if you double the distance it is applied?

17. Which of the following situations display work being done by the underlined word? Explain why or why not.
    a. A <u>cat</u> lifting a kitten.
        i. _____
    b. A <u>weightlifter</u> holing a large box above his head.
        i. _____
    c. A <u>rope</u> holding a bucket of water above the ground.
        i. _____
18. What are the SI units for a Joule?

19. Why is power usually expressed in kW?

20. What is the label for Work?

21. How much work are you doing if you apply 200 N of force to climb 60 m up a ladder?

22. How much work is required to produce 0.90 kW of power in 12 seconds?

23. What is a watt?

24. What are 6 types of simple machines?

25. What are the 2 mechanical advantage equations?

26. Give an example for each of the 3 classes of levers.
    a. _____
    b. _____
    c. _____

27. How much force is required to climb up 12 meters of a ladder if you use 550 J of work to do it?

28. What is the MA for a machine that produces 550 N when you apply 300 N?

29. A system of pulleys consisting of fixed and movable pulleys is called _____

30. How far did you push down the teeter-totter if it has a MA of 2.5 and it raised 1.2 cm?

31. What is the definition of power?

32. What are the 2 principle parts of all levers?

33. What is the equation for power?

34. A pulley is an example of a modified _____

35. What is the label for Power?

36. Explain HOW machines make work easier.

37. What is the mechanical advantage of a single, fixed pulley?

38. A force of 10,000 N is applied to a stationary wall. How much **work** is performed?

39. A pump drains a small pond by performing 120,000 J of work. The power rating of the pump is 1000 W. How much **time** does it take to drain the pond?

40. An ant does 1 J of work dragging a 0.0020 N grain of sugar. What **distance** does the ant drag the sugar?

41. Complete the other problems on the 3 Math Skills Worksheets and the other math help worksheets