WORKSHEET ON CHAPTER 5

1. A device that does work with only one movement is called a _____.

a. compound machine

b. force

c. pulley

d. simple machine

2. The force you apply to a machine is the _____.

a. efficiency

b. input force

c. output force

d. resistance

3. When using a broom to sweep a floor, your mechanical advantage will be less than 1 and your fulcrum will be your hand at the top of the broom. This means the broom acts as which type of lever?

a. Class 1 Lever

b. Class 2 Lever

c. Class 3 Lever

d. Class 4 Lever

4. A boy weighing 500 N sitting 3 m from the pivot point requires someone weighing 250 N to be sitting _____ on the opposite side.

a. 0.5 m

b. 50 cm

c. 5 m

d. 6 m

5. If a machine has a mechanical advantage less than one, which of the following must be true?

a. The effort force is less than the resistance force.

b. The effort distance is greater than the resistance distance.

c. The effort distance is less than the resistance distance.

d. The effort force and resistance force are the same.

6. Blake placed a ruler on the edge of his desk so that part was extended past the edge. He placed a ball of paper on one side and then hit the other side causing the paper ball to launch into the air.
In this example, the edge of the desk could best be described as

a. a fulcrum.

b. the load.

c. the effort.

d. mechanical advantage.

e. efficiency.

7. A grooved wheel with a rope, chain or cable that runs along the groove is a(n) _____.

a. screw

b. wheel

c. axle

d. pulley

8. To increase the DISTANCE that a machine moves a load, you

a. should increase the MA.

b. should decrease the MA.

c. should make the MA 1.

d. should decrease the efficiency.

e. can't change distance, only force.

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9. A bar that is free to pivot about a fixed point is a _____.

a. force

b. lever

c. wheel

d. pulley

10. A catapult is best described as what type of lever?

a. Class 1 Lever

b. Class 2 Lever

c. Class 3 Lever

d. Class 4 Lever

11. An inclined plane wrapped around a cylindrical post is called a(n) _____.

a. axle

b. screw

c. pulley

d. wedge

12. Brooke applies a force of 50 N for 10 m to lift a 40 N weight 10 m high with a pulley. How efficient is the pulley?

a. 120%

b. 1

c. 80%

d. None of the Above

13. A substance that reduces friction between the moving parts of machines is called a

14. How much work would be required to lift a 25 kg object to a height of 20 meters?

a. 500 Joules

b. 1.25 Joules

c. 245 Newtons

d. 1.25 Newtons

e. 4900 Joules

15. Caleb wants to create a block and tackle pulley system that lift a 500 N weight when a 100 N weight is attached. How many segments of rope should be attached to the block and tackle?

a. 1

b. 2

c. 3

d. 4

e. 5

16. How would you increase the mechanical advantage of a doorknob?

a. increase the radius of the outer knob

b. increase the radius of the inner cylinder

c. decrease the radius of the outer knob

d. The mechanical advantage of a doorknob is always 1

e. A doorknob is not a simple machine

17. Which of the following machines ALWAYS increases your force?

a. class 2 lever

b. class 3 lever

c. wheel and axle

d. pulley

e. no machine can increase your force

18. How long will it take a 300 watt motor to complete a job that requires 1200 Joules of work?

a. 3600 seconds

b. 3600 Joules

c. 4 seconds

d. 4 Joules

e. 0.25 seconds

19. When water turns a turbine at a dam, the kinetic energy of the falling water changes to mechanical energy of the spinning turbine. Which of the following is an accurate description of the situation?

a. The turbine is providing potential energy to the water.

b. The total amount of energy in the system is decreasing.

c. The water is doing work on the turbine.

d. The total amount of energy is increasing.

e. The water is converting its kinetic energy to potential energy.

20. How much work is done when a 1200N object is raised 6 meters?

a. 200 Joules

b. 200 Newtons

c. 7200 Joules

d. 7200 Newtons

e. None of the above