Simple Machines Name_____

1) An inclined plane is most similar to a LEVER.

   If False what is the correct answer?

   _____

   a) True
   b) False

2) A lever with an effort arm of 8 units long and a resistance arm of 4 units long can lift a 5 pount weight with how many pounds of effort force?

   MA = length of effort arm ÷ length of resistance arm
   Effort force = resistance force ÷ MA

   _____

   _____

3) What would be the mechanical advantage of a screw with a diameter of 5 and a pitch of 1/3?

   Answer=Diameter x 3.14
   MA= Answer ÷ pitch

   a) About 45
   b) 3.14
   c) 18
   d) About 47

Which of the following are simple machines:

4) _____ Lever
5) _____ Inclined Plane
6) _____ Elevator
7) _____ Pully
8) _____ Rope
9) _____ Wedge
10) _____ Run

a) Yes
b) No

11) The law of conservation of energy states that energy can neither be _____ or _____.

12) If 50 joules of work is input into a simple machine with a mechanical advantage of 6, how much work does the machine output?

Output= Work x MA

_____

_____

13) What is the mechanical advantage of a 20 meter long inclined plane with a height of 5 meters?

MA= (Length) ÷ (Height)

_____

_____

14) What happens to the mechanical advantage of the wheel and axle if the diameter of the axle in a wheel and axle system is cut in half while the diameter of the wheel doubles?

a) Quadruple
b) Be cut in half
c) Double
d) Stay the same

15) How much force is required to lift a 30 N object with a pulley system that has a mechanical advantage of 3?

Answer= (Effort Force) ÷ (Mechanical Advantage)

_____

_____

16) The mechanical advantage of a machine is written as what ratio?

a) Work done to the input force

b) effort force to work

c) input force to the output force

d) work to energy