**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mechanical Advantage Practice**

**Show Work!**

**Equation Triangles:**

1. **An inclined plane is 1.4 meters long and the high end is 2 meters above the ground. What is the mechanical advantage of this machine?**
2. **A steering wheel is 48 in in diameter. It is attached to an axle that is 6 cm in diameter. What is the mechanical advantage of this machine? (1 in=2.54 cm)**
3. **A lever has a resistance arm that is 1.5 m long. The effort arm is 12 m long. What is the MA?**
4. **Ho w long does a lever need to be to move a 450 N block with only 75 N of force if the resistance arm is 2.5 m from the fulcrum?**
5. **A pulley system has 3 supporting ropes. A force of 180 N is used to lift a motor using the pulley. How much does the motor weigh?**
6. **A 200 kg crate is pushed up an inclined plane that has a MA of 5. How much force is needed to push the crate up the ramp?**
7. **A wheel and axle set-up has a MA of 9. The axle has a 3 cm radius. What is the DIAMETER of the wheel?**
8. **A girl pushes a box that has a mass of 450 N up an incline. If the girl pushes with a force of 150 N along the incline, what is the mechanical advantage of the incline?**
9. **An iron bar is used to lift a slab of cement. The force applied to lift the slab is 400 N. If the slab weighs 6400 N, what is the MA of this bar?**
10. **A force of 255 N is needed to pull a nail from a wall, using a claw hammer. If the resistance force of the nail is 3650 N, What is the MA of the hammer?**