**Work, Power, & Machines** (p. 431 – 437)

**I. What Is Work?**

 **1. Define the term work.**

 Work –

 **2.** **Write out the equation to determine work.**

 Work = *W* =

 **3.** **Pushing against a wall as hard as you can is an example of doing work.**

 Circle One : True False

 **4. Why isn’t work being done on a barbell when a weightlifter is holding the barbell over**

 **his head?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **5. What are two conditions necessary to perform work?**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **6. A quarterback throwing a football performs work throughout the flight of the football.**

 Circle One : True False

 **7. Walking with a lunch tray to your seat is an example of doing work.**

 Circle One : True False

 **8.** **The SI unit for work is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**II. Power**

 **1. Define the term power.**

 Power –

 **2.** **Write out the equation to determine power.**

 Power = *P* =

 **3.** **The SI unit for power is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **4. In order to do work faster, more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is required.**

 **5. Circle the letter of each sentence that is true about power.**

 a. Power and work are always equal.

 b. You can increase power by doing a given amount of work in a shorter period of time.

 c. When you decrease the force acting on an object, power increases.

 d. When you do less work in a given time period, the power decreases.

**III. Machines & Mechanical Advantage**

 **1. Define the term machines.**

 Machines –

 **2. What are four common machines that you have used in your life?**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3. List an example of how machines perform the following :**

 Increase Force = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Increase Distance Of Force Applied = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Change Direction Of Applied Force = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **4.** **Write out the formula for determining mechanical advantage** *(in terms of force)***.**

 Actual Mechanical Advantage = *AMA* =

 **5. Write out the formula for determining mechanical advantage** *(in terms of distance)***.**

 Ideal Mechanical Advantage = *IMA* =

 **6. What are the SI units for mechanical advantage?**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **7. How does a car jack and a loading ramp make work easier?**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_