**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?**

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