Name _____ Date _____ Class _____

SECTION 2 Reinforcement

Using Machines

Directions: *Use the formula,* efficiency $= (W_{out}/W_{in}) \times 100\%$, *to calculate the efficiency of each of the following machines.*

1. A 600-N box is pushed up a ramp that is 2 m high and 5 m long. The person pushing the box exerts a force of 300 N. What is the efficiency of the ramp?

2. A person uses a fixed pulley to raise a 75-N object 40 m. The force exerted on the object is 120 N. What is the efficiency of the pulley?

Directions: *Complete the following sentences using the correct terms.*

3. The work input is equal to the work _____ in an ideal machine.
4. Machines are useful because they can change the _____, _____, or _____ of the force you need to exert.
5. The force you exert on an object is the effort, or _____ force.
6. The _____ of a machine compares the input force to the output force.
7. _____ can reduce a machine's efficiency.
8. The ability of a machine to convert input work to output work is called the machine's _____.

Meeting Individual Needs