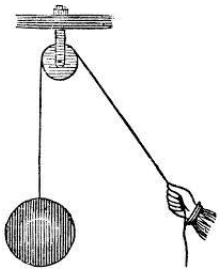
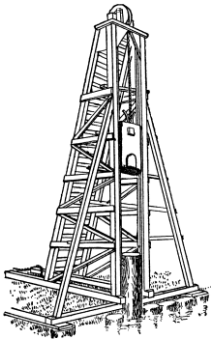
Name _____ Date _____ Period ____

Answer the following questions about Power on a separate sheet of paper.

1. A box weighs 1.00×10^3 N is lifted a distance of 20 m straight up by a rope and pulley system. The work is done in 10.0 seconds. What is the power developed in watts and in kilowatts?





2. A diesel engine lifts a 2.25×10^3 N hammer of a pile driver 20.0 m in 5.00 seconds. What is the power of the engine in kilowatts?

3. A rock climber wears a 12.0 kg knapsack while scaling a cliff. After 30.0 minutes, the climber is 8.2 m above his starting point.

a. How much work in joules is done on the knapsack?

b. If the climber weighs 6.00×10^2 N, how much total work is done?

c. During the 30.0 minutes, what is the climber's average power in kilowatts?

4. An electric motor develops 65.0 kilowatts of power as it lifts a loaded elevator 18.0 m in 40.0 seconds. How much force does the motor deliver?

5. A gardener applies a force of 150 N to push a wheelbarrow 60.0 m at a constant speed for 20.0 seconds.

a. What is the gardener's power in watts?

b. What is the gardener's power if the speed is doubled?