Power
Part II's

1. If the time required for a student to swim 500 meters is doubled, the power developed by the student will be

2. If 20. joules of work is done in 4.0 seconds, the power developed is

3. How long would it take a machine to do 5,000 joules of work if the power rating of the machine is 100 watts?

4. A motor has an output of 1,000 watts. When the motor is working at full capacity, how much time will it require to lift a 50-newton weight 100 meters?

5. In raising an object vertically at a constant speed of 2.0 meters per second, 10. watts of power is developed. The weight of the object is

6. A 45-kilogram bicyclist climbs a hill at a constant speed of 2.5 meters per second by applying an average force of 85 Newtons. Approximately how much power does the bicyclist develop?

7. A motor having a maximum power rating of 8.1×10^4 watts is used to operate an elevator with a weight of 1.8×10^4 Newtons. What is the maximum weight this motor can lift at an average speed of 3.0 meters per second?

8. What is the average power developed by a motor as it lifts a 400.-kilogram mass at constant speed through a vertical distance of 10.0 meters in 8.0 seconds?

9. What is the maximum height to which a 1200-watt motor could lift an object weighing 200. newtons in 4.0 seconds?

10. A motor having a power rating of 500. watts is used to lift an object weighing 100. newtons. How much time does the motor take to lift the object a vertical distance of 10.0 meters?