

Group Quiz 5.1

Name _____

1. A motor does 542 J of work in 15 seconds. What is its power output? What time would it take to do 12,450 J of work?

2. An electric motor consumes 516 J of electrical energy, and does 489 J of mechanical work. What is its efficiency? If the motor puts out 745.7 W of power (It is a 1 HP motor...), what is its power consumption?

3. An elevator uses a 31,000 W motor. What is the maximum mass it can raise 33.5 m (11 floors) in 28 seconds?

4. What is the power output of a football player that pushes a 162 kg sled a distance of 5.0 m in 3.8 seconds if the coefficient of friction between the sled and the ground is 0.82?