

Energy: Worksheet 5 – Power Problems

1. A 60 kg box is lifted by a rope a distance of 10 meters straight up at constant speed. How much power is required to complete this task in 5 seconds?
2. Hulky and Bulky are two workers being considered for a job at the UPS loading dock. Hulky boasts that he can lift a 100 kg box 2.0 meters vertically, in 3.0 seconds. Bulky counters with his claim of lifting a 200 kg box 5.0 meters vertically, in 20 seconds. Which worker has a greater power rating?
3. A 1994 Ford Mustang is driving down a road with a constant speed of 30 m/s. The engine must exert a 5000 N force to maintain this speed.
 - a. What is the power rating of the engine?
 - b. How does the Mustang's power rating compare to the 220 hp Dodge Stealth engine (1 hp = 746 W)?

