

Work and Power Worksheet

- 1) An elevator (mass: 1000 kg) is lifted 20 meters.
 - a. How much **work** was done on the elevator?

- 2) A 1500 kg sports car accelerates from 0 to 30 m/s (0 to 60 mph)
 - a. How much **work** is done on the sports car?

- 3) Time required to lift the elevator in problem 1 is 5 seconds (moving at constant velocity).
 - a. What **power** is required to lift the elevator from problem 1?

 - b. The elevator from problem 1 continues to rise at 4 m/s, what **power** is required to continue the lift?

- 4) The sports car from #2 can accelerate from 0 to 30 m/s in 5 seconds.
 - a. How much **power** is required to do this?

 - b. What is the average **acceleration** of the sports car?

 - c. *The sports car continues to accelerate. After 10 seconds, how fast is the car going?*

 - d. *The sports car continues to accelerate. How long will it take the sports car to travel 400 meters (about ¼ mile).*