AP Physics – Unit 4

Wkst – Work problems

1. Suppose you take an elevator from street level to the roof of a building. The elevator moves almost the entire distance at constant speed, so that it does 1.5×10^5 J of work on you as it lifts the entire distance. If your mass is 60.0 kg, how tall is the building? Ignore the effects of friction.

2. A stone cannonball with a mass of 5.40×10^2 kg is rolled down a hill that made an angle of 30.0° with the horizontal. If the 5.30×10^4 J of work done by gravity on the cannonball as it rolled down a hill, how far did it roll?

3. A crate of mass 1.02×10^3 kg, slides down a ramp that is 18.0 m long and is inclined to the ground by 10.0°. If the coefficient of kinetic friction is 0.13, what is the net work done on the crate during the descent?

4. The graph below shows the net force on a 1050. Kg car. What is the work done on the car after 25 m?