**More Practice**

**Ch 2 PSC 100**

1. A 950 kg elevator car is lifted by an **upward** force of 11,200 N.

a. What is the weight of the elevator car?

b. What is the **net force** on the elevator car (note: there are two forces on the car)?

c. What is the acceleration of the elevator car?

d. How long before it reaches a speed of 18.0 m/s? What is its height above the ground floor

at this time?

e. It continues at the same speed for 8.0 more seconds. What is the maximum height the

elevator acquires in meters and in feet?

f. If the elevator were to suddenly be cut and the elevator car fell downward, with what speed

would it hit the bottom in m/s and mi/hr? (a harder one)

g. Graph a vs t, v vs t and y (vertical distance) vs t for the entire process.

2. If you were to drag a couch across the floor against a frictional force of 45 pounds, what

force in Newtons would be required to make the couch accelerate at 0.80 m/sec2? Assume

the couch has a mass of 55 kg. (1 lb = 4.45 N) (again, note that there are two opposing forces)

3. If a diver jumps off a diving board which is 14 meters above the water, how long before she

hits the water?

Answers: #1. a. 9300 N b. 1900 N c. 2.00 m/s2 d. 9.0 sec, 81m e. 225m, 738 ft

f. 66 m/s, 148 mi/hr #2 244 N #3 1.69 seconds