Chapter 5, Practice, PHY 1301, Spring 2015

1. Two people try to lift a 20 kg suitcase. One of them exerts a force of 100 N at an angle of 30° N of E. At which angle N of W does the second person have to apply its force of 200 N in order to move the suitcase straight up.

a. 75.5°
b. 64.5°
c. 60.0°
d. 30.0°

2. If we know an object is moving at constant velocity, we must assume:

a. there is no net force acting on the object
b. there are no forces acting on the object
c. the object is accelerating
d. the object is losing mass

3. When you weigh yourself on the ground your weight is 142 N. In a moving elevator your apparent weight is 121 N. What is the direction and magnitude of the elevator's acceleration ?

a. 2.9 m/s^2 up
b. 2.9 m/s^2 down
c. 1.45 m/s^2 up
d. 1.45 m/s^2 down

4. A 50.0-kg crate is being pulled along a horizontal, smooth surface. The pulling force is 10.0 N and is directed 20.0° above the horizontal. What is the acceleration of the crate?

a. 0.376 m/s^2
b. 0.0728 m/s^2
c. 0.188 m/s^2
d. 0.0684 m/s^2
e. 0.2 m/s^2

5. A 50 kg woman is entering an elevator at rest. What is her weight when the elevator moves upward with an acceleration of 2.5 m/s^2

a. 615 N
b. 365 N
c. 490 N
d. 50 N