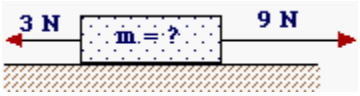
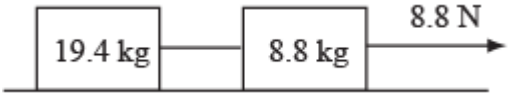
Name: _____ Practice Ph11 2-2

1. The block in the following diagram is being pulled by two ropes, one with a tension of 9 N and the other with a tension of 3 N. Determine the mass of the block (in kg) if it accelerates at a rate of 1.2 m/s^2.



2. A constant force, acting on a 93.0 kg mass produces an acceleration of 11.0 m/s^2. What mass (in kg) would produce an acceleration of 33 m/s^2 with the same constant force?

3. The blocks shown below are placed on a smooth horizontal surface and connected by a piece of string. If a 8.8-N force is applied to the 8.8-kg block, what is the tension in the string?



4. What force would cause a 250 kg motorcycle to have an average acceleration of 2.20 m/s^2 for 3.50 seconds?
   a) 550 N
   b) 317 N
   c) 1110 N
   d) 32.6 N

5. A student was working on a satellite problem and had simplified the solution as far as 57.3 Ns^2/m. The student was solving for
   a) radius
   b) force
   c) mass
   d) acceleration
   e) period

6. If a small unbalanced force acts on an object, the object
   a) moves at a constant velocity
   b) moves with uniform motion
   c) comes to rest and remains at rest
   d) accelerates
   e) remains stationary

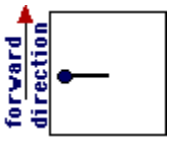
7. The force necessary to accelerate a 2.0 kg mass at a rate of 5.0 m/s^2 is
   a) 10 N
   b) 0.40 N
   c) 2.0 N
   d) 2.5 N

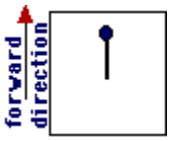
8. A 6.0 kg object is moving south. A net force of 12 N north acting on the object will provide an acceleration of
   a) 2.0 m/s^2 [S]
   b) 6.0 m/s^2 [N]
   c) 2.0 m/s^2 [N]
   d) 72 m/s^2 [S]
   e) 18 m/s^2 [N]

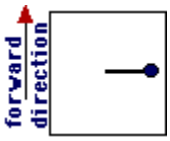
9. A force **F** acts horizontally on a mass **M** which is at rest on a horizontal, frictionless surface, giving the mass an acceleration **a**. If a force **2F** acted on a mass (1/2)**M** at rest on the same surface, the second mass would acquire an acceleration of
   a) **a**/4
   b) 4**a**
   c) 2**a**
   d) **a**
   e) **a**/2

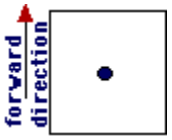
10. An airplane moves in straight level flight at **constant** velocity. What is the **net force** acting on it if the mass of the plane is 1000 kg and the frictional drag of the air is 1800 N?
   a) 10 000 N
   b) 1800 N
   c) 11 800 N
   d) 0 N

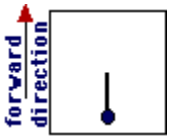
11. A man on a train is seated facing forward. He holds a thread fastened to a lead ball so that the ball is suspended over the center of an open book. The train maintains a speed of 40 km/h for 10 minutes. Which diagram best represents the position of the lead ball over the book, as seen by the man?

a) 

b) 

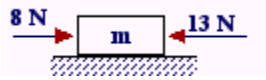
c) 

d) 

e) 

12. The downward force of gravity on an elevator is 10^4 N. The upward force acting on the elevator is 10^4 N. Which of the following statements is **NOT** correct?
   a) The elevator could be moving upward with constant speed
   b) The elevator could be moving downward with constant speed
   c) The elevator could be at rest
   d) The net force on the elevator is zero
   e) The elevator could be accelerating upward

13. Choose which system of forces gives the mass **m** the greatest acceleration.

a) 

b) 

c) 

d) 

e) 

14. What is the net force acting on a hang Glider moving at constant velocity in level flight?
    a) Equal to gravity.
    b) Zero
    c) Directed downwards.
    d) Directed upwards.

15. A woman who weighs 640 N stands on a spring scale inside an elevator. If the elevator moves downwards at a constant speed of 1.0 m/s, then the reading on the spring scale will be close to:
    a) 64 N
    b) 700 N
    c) 640 N
    d) 580 N

16. A large mass, M, collides with a stationary small mass, m. During the collision, the forces exerted on each mass are measured. Which of the following is correct about the magnitude of the forces?
    a) Both masses exert equal forces on each other during the collision.
    b) The small mass, m, exerts a greater force on the large mass, M.
    c) The large mass, M, exerts a greater force on the small mass, m.
    d) No force is exerted during the collision.