

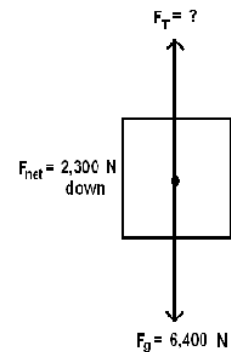
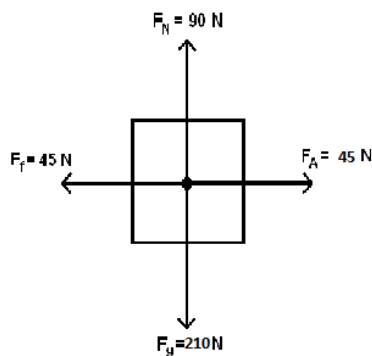
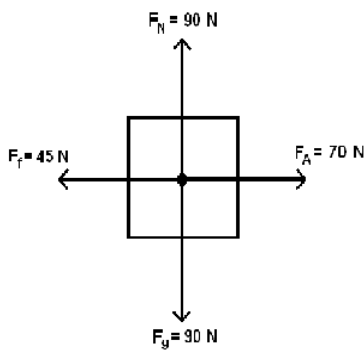
Newton's Laws Worksheet

1. The net external force on the propeller of a 0.65 kg model airplane is 19N forward. What is the acceleration of the airplane?

2. The next external force on a golf cart is 422 N north. If the cart has a total mass of 290 kg, what are the magnitude and direction of its acceleration?

3. A car has a mass of 1.63×10^3 kg. What force is required to accelerate the car at 4.26 m/s^2 to the east?

4. What is the net force for each box shown below?



5. A 5.0 kg mass starts from rest at the top of an inclined plane 0.95 m long and slides down to the bottom in 1.20 s. What net external force acts on the mass along the incline?
6. Jimmy and Bobby have a tug of war with a 5 kg rope. If Jimmy pulls to the right with a force of 32N, and the rope accelerates toward him at a rate of 3.7 m/s^2 , what is the force that Bobby pulls on the rope?
7. Tiffany has a mass of 80 kg on Earth. What is her mass and weight on the following planets?
- Mars ($g = 3.4 \text{ m/s}^2$)
 - The Moon ($g = 1.6 \text{ m/s}^2$)
 - Jupiter ($g = 26.7 \text{ m/s}^2$)
8. An 2400 kg mass is hoisted upward at a rate of 3.2 m/s^2 . What is the tension in the rope pulling the mass upward?