1. How much does a 19kg cat weigh here on earth?
2. Suppose there is a bucket suspended by a rope. The bucket is motionless and the mass of the bucket is 4kg. Calculate the net force acting on the bucket. Calculate the tension of the rope.
3. Diagram the force exerted on the block by the table given the block is 10kg.
4. An object is suspended by 4 ropes. One rope is pulling to the right with 119 N force, one rope is pulling to the left with 72 N force, one rope is pulling up with a 423 N force, and the other rope is pulling down with 245 N force. What is the magnitude and direction of the net external force on the object?
5. Forces acting on an object: Wind 33N backwards, Friction 24N Backwards, Pushing 42N forward, Pushing 47N forward. Calculate the net force on the object.
6. You and your friend are playing tug-of-war with a toy. The mass of the toy is 0.50kg. If you pull with a force of 40N and your friend pulls in the opposite direction with 38N, what is the horizontal acceleration of the toy?
7. A force of 45 N is applied to an object with a mass of 9 kilograms. What will be the object's final velocity after 17 seconds assuming the object started from rest?
8. A shopper in a supermarket pushes a loaded 32 kg cart with a horizontal force of 12 N. If the cart started from rest, how far will the cart travel in 3.5 s.
9. A 15 kg chair initially at rest on a horizontal floor requires a 265 N horizontal force to set it in motion. Once the chair is in motion, a 227 N horizontal force keeps it moving at a constant velocity. Calculate the coefficient of static friction and kinetic friction between the chair and the floor.
10. Describe the interaction a 2-door car and full size truck if they collided head-on given Newton's 3rd Law states for every action there is an equal and opposite reaction. What happens to each and their accelerations?