

1a. For the free body diagram below, are the forces balanced or unbalanced?  
\_\_\_\_\_

1b. What is the net force on the object below?  
Be sure to include **magnitude** and **direction**!

Net Force = \_\_\_\_\_

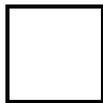
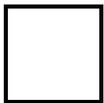


3. **Directions:** Draw a free body diagram to show the forces acting in each example.

a) A plant sits on a bookshelf.  
Draw the forces acting on the plant.

b) You push a sled carrying your little brother across the snow.

c) A person hangs from a bungee cord.

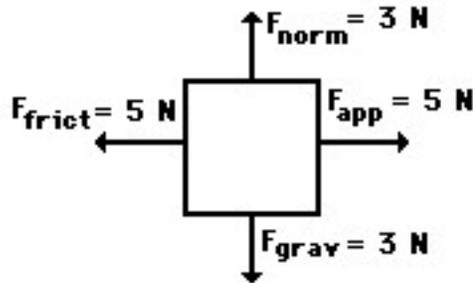


Equilibrium Attained Net Force = 0 Newtons

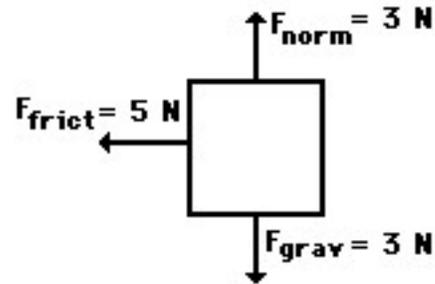
Draw a free body diagram with a 10 N force and a 25 Newton force acting on an object in the opposite directions. Describe the additional force needed to be applied to achieve equilibrium

1. Free-body diagrams for four situations are shown below. For each situation, determine the net force acting upon the object and the direction of the force vector.

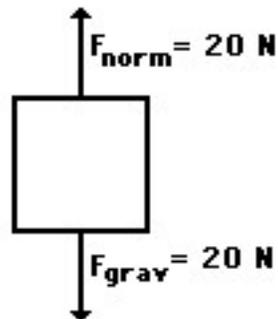
Situation A



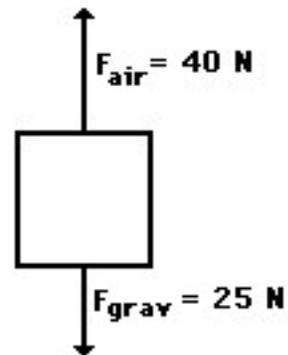
Situation B



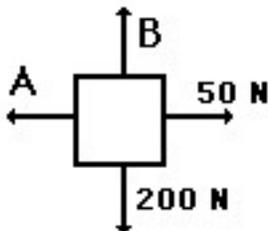
Situation C



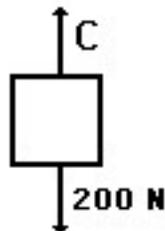
Situation D



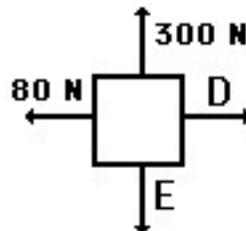
2. Free-body diagrams for four situations are shown below. The net force is known for each situation. However, the magnitudes of a few of the individual forces are not known. Analyze each situation individually and determine the magnitude of the unknown forces. Write the unknown force next to each letter.



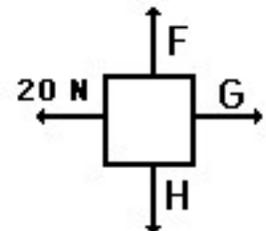
$F_{\text{net}} = 0 \text{ N}$



$F_{\text{net}} = 900 \text{ N, up}$



$F_{\text{net}} = 60 \text{ N, left}$



$F_{\text{net}} = 30 \text{ N, right}$