

**Introduction: Fill in the blanks with the appropriate answers.**

Questions:

1. An object is in \_\_\_\_\_ when the net force acting on it is zero.
2. The two main types of equilibrium are \_\_\_\_\_ equilibrium and \_\_\_\_\_ equilibrium.
3. In static equilibrium, an object is at rest and the sum of all \_\_\_\_\_ acting on it is zero.
4. The principle of \_\_\_\_\_ states that the total torque acting on an object in equilibrium is also zero.
5. When analyzing equilibrium, the \_\_\_\_\_ method can be used to solve for unknown forces.
6. An example of an object in dynamic equilibrium is a \_\_\_\_\_ moving at a constant velocity.
7. The condition for rotational equilibrium is that the sum of the \_\_\_\_\_ about any point must equal zero.
8. In a free-body diagram, forces acting on an object are represented as \_\_\_\_\_ originating from the center of the object.
9. The center of mass of an object is the point at which the object's mass is \_\_\_\_\_ distributed.
10. In equilibrium problems, it is important to consider both \_\_\_\_\_ forces and \_\_\_\_\_ forces.