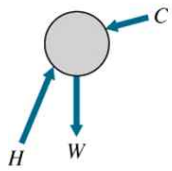
● particle(질점) - is a body whose **size does not influence** its response to the forces acting on it.

- Rotational motion of the body can be ignored.
- Simplest mechanical system is a single particle.
- The body may be modeled as a point.
- If the size or rotation of a body cannot be ignored, the body cannot be treated as a particle



● rigid body(강체) - is a body that does not deform under the action of forces.

1.2 Newton's law of motion

● First law(관성의 법칙) - In the absence of applied forces, a particle originally at rest or moving with constant speed in a straight line will remain at rest or continue to move with constant speed in a straight line -> **"special case of the second law"**

정지=>정지, 운동=>운동

● Second law(가속도의 법칙) = If a particle is subjected to a force, the particle will be accelerated in the direction of the force, and the magnitude of the **acceleration** will be **proportional to** the magnitude fo the **force**.

F = m**a**, where, **F**: force, m: mass, **a**: acceleration

● Third law(작용과 반작용의 법칙) - Every force (or action) is accompanied by an equal and opposite force (reaction).

-> This law can be extended to a system of two or more particles acted on by a system of forces.

-> But second law assumes that a single force acts on a single particle