

Momentum

The momentum of a moving object is the product of its mass and its velocity.

$$p = mv$$

The unit of momentum is kilogram metres per second, kg m/s or kg m s⁻¹.

Momentum is a vector quantity, since mass is a scalar quantity and velocity is a vector quantity¹. The direction of momentum is the same as that of the velocity.

Example

A mass of 5kg is moving in a direction at a velocity of 7 ms⁻¹.

Answer

The momentum $p = mv = 5 \times 7 = 35 \text{ kg m s}^{-1}$

¹ [Vectors and Scalars](#)