

1- The momentum of an object of mass m is p . Which quantity has the same base unit as $\frac{p^2}{2m}$?

Answer:

$$\frac{p^2}{2m} = \frac{(mv)^2}{2m} \Rightarrow \frac{1}{2} m v^2 \frac{m}{m} = \frac{1}{2} m v^2 = \text{KE}$$

2- An object **A** has the same mass as an object **B**, but the object **B** has twice the velocity of the object **A**.

Which statement of the following is right?

- a- Object A has the same kinetic energy as object B
- b- Object A has twice the kinetic energy of object B
- c- Object B has twice the kinetic energy of object A
- d- Object A has half the kinetic energy of object B
- e-** Nothing can be said about the kinetic energy of objects A and B.