

- 6 An object has an initial velocity  $u$  and an acceleration  $a$ . The object moves in a straight line through a displacement  $s$  and has final velocity  $v$ .

The above quantities are related by the equation shown.

$$v^2 = u^2 + 2as$$

Which condition **must** be satisfied in order for this equation to apply to the motion of the object?

- A The direction of  $a$  is constant and the direction of  $a$  is the same as the direction of  $s$ .
- B The direction of  $a$  is constant and the direction of  $a$  is the same as the direction of  $u$ .
- C The magnitude of  $a$  is constant and the direction of  $a$  is constant.
- D The magnitude of  $a$  is constant and the direction of  $a$  is the same as the direction of  $v$ .