17 A student attempts to derive the formula for kinetic energy E_K. She begins by considering an object of mass m that is initially at rest. A constant force F applied to the object causes it to accelerate to final velocity v in displacement s. The kinetic energy gained by the object is equal to the work done on the object by the force F.

Which equation does the student **not** need in order to derive the formula for E_K?

A $F = ma$ **B** $W = Fs$ **C** $E = \frac{1}{2}Fs$ **D** $v^2 = u^2 + 2as$