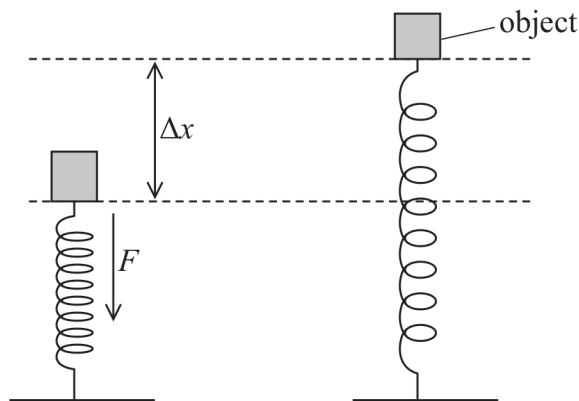


- 3 An object of mass  $m$  is resting on top of a spring. The spring is compressed a further distance  $\Delta x$  by a vertical force  $F$ . The force is removed and the spring returns to its original length as shown.



When  $\Delta x$  becomes zero the object has a vertical speed  $v$ .

Which of the following equations describes the energy transfer as the spring returns to its original length?

- ☐ A  $\frac{1}{2} F \Delta x = \frac{1}{2} m v^2 - m g \Delta x$
- ☐ B  $\frac{1}{2} F \Delta x = \frac{1}{2} m v^2 + m g \Delta x$
- ☐ C  $F \Delta x = \frac{1}{2} m v^2 - m g \Delta x$
- ☐ D  $F \Delta x = \frac{1}{2} m v^2 + m g \Delta x$