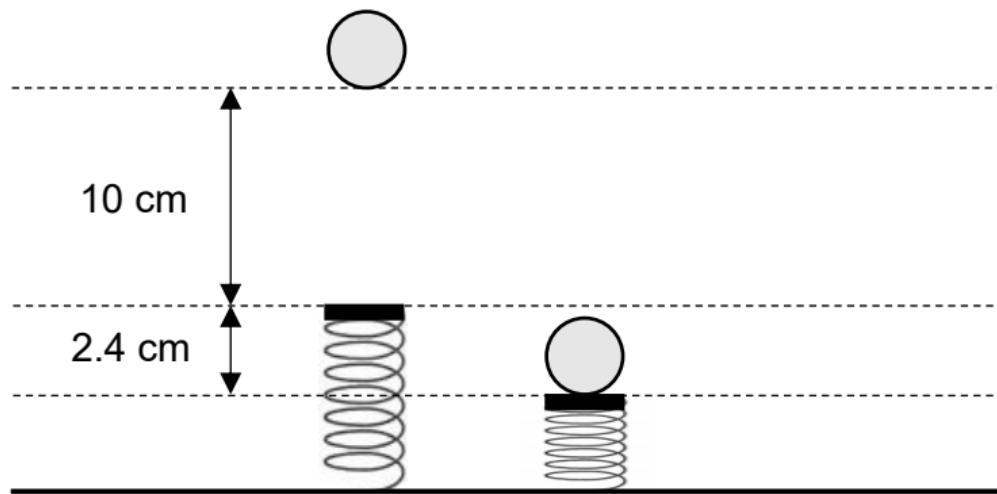


- 12** A 20 g ball bearing is released from rest 10 cm above the top of an unstretched spring. It compresses the spring and comes to rest when the spring is compressed by 2.4 cm as shown in the figure below.



What is the spring constant of the spring?

**A**  $2.0 \text{ N m}^{-1}$

**B**  $8.6 \text{ N m}^{-1}$

**C**  $68 \text{ N m}^{-1}$

**D**  $84 \text{ N m}^{-1}$

- 13** A stone of mass  $m$  attached to a string is whirled in a vertical circle of radius  $r$ . At the top of the