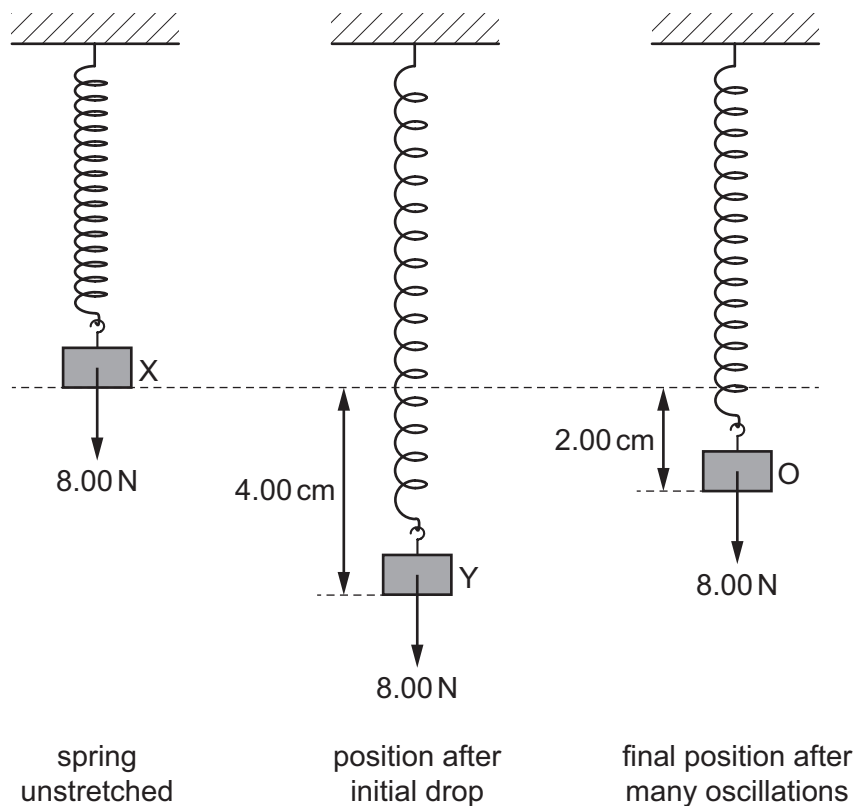


- 16** An 8.00 N weight is attached to the lower end of a spring which is fixed at its upper end. The weight is initially held at rest at position X and the spring is unstretched. The weight is then released and falls to position Y, which is 4.00 cm below X. The weight oscillates and then eventually comes to rest at O, which is 2.00 cm below X.



How much energy is lost from the system?

- A** 0.04 J      **B** 0.08 J      **C** 0.16 J      **D** 0.32 J
- 17** The force resisting the motion of a car is proportional to the square of the car's speed. The magnitude of the force at a speed of  $20.0 \text{ m s}^{-1}$  is 800 N.
- What useful output power is required from the car's engine to maintain a steady speed of  $40.0 \text{ m s}^{-1}$ ?

- A** 32 kW      **B** 64 kW      **C** 128 kW      **D** 512 kW