

Classwork 4-6

1. We have a spring with a spring constant $k = 10 \text{ N/m}$. ~~Expand~~ We stretch the spring 0.05 m . What is the restoring force of the spring?

2. A 0.30 m spring has a 2.0 kg weight attached to it that stretches the spring to a new length of 0.35 m . Find the spring constant k of this spring.

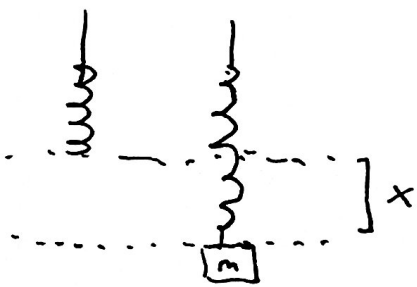
Hooke's law

$$\vec{F}_s = -kx$$

F_s = Force of spring (N)

k = spring constant (N/m)

x = displacement (m)



The negative sign in Hooke's law $\vec{F}_s = -kx$ means that the spring force of spring is in opposite direction of the displacement. It is a restoring force. Remember that force & displacement are vectors. Direction matters.