Answer on 40290, Physics, Mechanics | Kinematics | Dynamics
Question: If a force of 80N ex- tends a spring of natural length 8m by 0.4m what will be the length of the spring when the applied force is 100N.
Solution. First, let us determine the spring constant

$$k = \frac{F_1}{\Delta x_1}$$

where $F_1 = 80N$ and Δx_1. Then, the spring will extend under the force of 100N on

$$\Delta x_2 = \frac{F_2}{k}$$

Hence, length will be

$$L + \Delta x_2 = L + \frac{F_2 x_1}{F_1} = 8 + \frac{100 \cdot 0.4}{80} = 8.5\, m$$