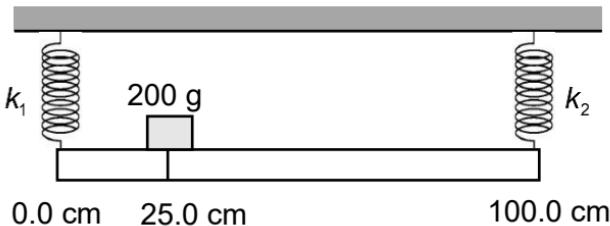


- 4 A metre rule of mass 50 g is suspended horizontally from the ceiling by two springs at its ends, as shown.



The spring at the 0.0 cm mark has spring constant k_1 , while the spring at the 100 cm mark has spring constant k_2 .

The springs have the same length when they are unstretched.

A 200 g mass is placed at the 25.0 cm mark.

What is the ratio $\frac{k_2}{k_1}$ such that the ruler is horizontal?

A 0.33

B 0.43

C 2.3

D 3.0

- 5 A cube of density ρ_c of side L floats in a beaker of water of density ρ_w . The depth of the cube