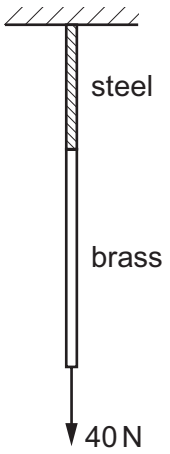
21 A 0.80 m length of steel wire and a 1.4 m length of brass wire are joined together. The combined wires are suspended from a fixed support and a force of 40 N is applied, as shown.



The Young modulus of steel is 2.0×10^{11} Pa.

The Young modulus of brass is 1.0×10^{11} Pa.

Each wire has a cross-sectional area of 2.4×10^{-6} m^2.

The wires obey Hooke's law.

What is the total extension? Ignore the weights of the wires.

A 1.7×10^{-4} m **B** 3.0×10^{-4} m **C** 3.9×10^{-4} m **D** 9.0×10^{-4} m