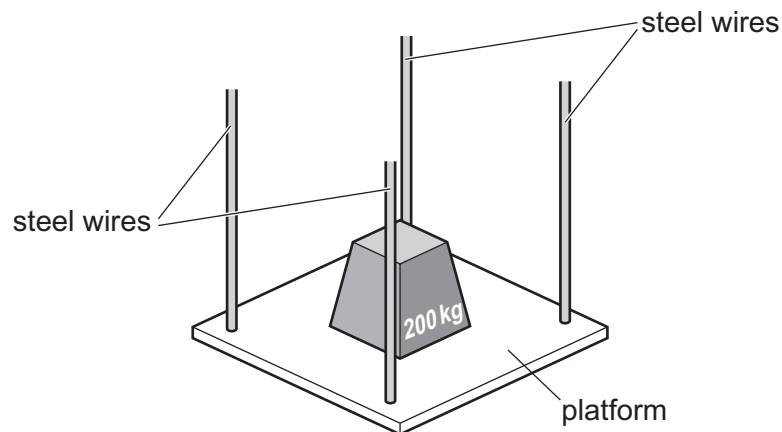


- 20** A platform is suspended by four steel wires. Each wire is 5.0 m long and has a diameter of 3.0 mm. The Young modulus of steel is 2.1×10^{11} Pa.



The wires obey Hooke's law when a load of mass 200 kg is placed on the platform.

How far will the platform descend because of the extension of the wires?

- A** 1.7×10^{-4} m **B** 4.1×10^{-4} m **C** 1.7×10^{-3} m **D** 6.6×10^{-3} m
- 21** A tensile force of 7.00 MN is applied to a sample of steel. This causes the sample to extend by 5.00 mm in the direction of the force. The sample obeys Hooke's law.
- What is the work done to extend the sample?
- A** 17.5 J **B** 35.0 J **C** 17.5 kJ **D** 35.0 kJ
- 22** Two waves X and Y have the same frequency. The amplitude of X is $1.5A_0$ and the amplitude of Y is $2.5A_0$. The waves meet at a point and superpose to form a resultant wave.

For the resultant wave, what is the ratio $\frac{\text{maximum possible intensity}}{\text{minimum possible intensity}}$?

- A** 1.7 **B** 2.8 **C** 4.0 **D** 16