5 A mass of 24 kg is suspended from a steel wire of length 1.5 m. The wire has cross-sectional area $3.1 \times 10^{-6} \, \text{m}^2$.

The Young modulus of steel is $1.8 \times 10^{11} \, \text{Pa}$.

Which of the following gives the extension of the wire?

☒ **A** $\dfrac{24 \times 1.5}{1.8 \times 10^{11} \times 3.1 \times 10^{-6}}$

☒ **B** $\dfrac{24 \times 9.81 \times 1.5}{1.8 \times 10^{11} \times 3.1 \times 10^{-6}}$

☒ **C** $\dfrac{1.8 \times 10^{11} \times 3.1 \times 10^{-6}}{24 \times 1.5}$

☒ **D** $\dfrac{1.8 \times 10^{11} \times 3.1 \times 10^{-6}}{24 \times 9.81 \times 1.5}$

(Total for Question 5 = 1 mark)