1 What is the order of magnitude of the Young modulus for a metal such as copper?

A 10^{-11} Pa **B** 10^{-4} Pa **C** 10^{4} Pa **D** 10^{11} Pa

2 The force F between two point charges q_1 and q_2, a distance r apart, is given by the equation

$$F = \frac{kq_1q_2}{r^2}$$

where k is a constant.

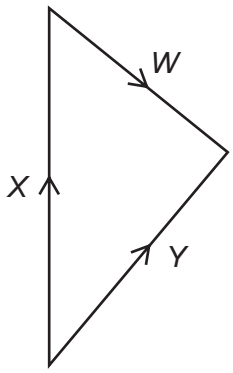
What are the SI base units of k?

A $\text{kg m}^3\text{ s}^{-4}\text{ A}^2$ **B** $\text{kg m}^3\text{ s}^{-4}\text{ A}^{-2}$ **C** $\text{kg m}^3\text{ A}^2$ **D** $\text{kg m}^3\text{ A}^{-2}$

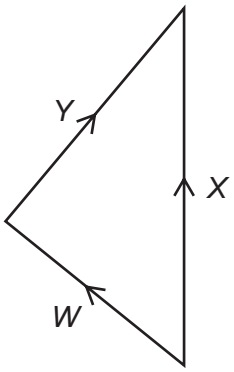
3 An aeroplane can fly at a velocity X when moving through still air. When flying in wind the aeroplane's velocity relative to the ground is Y.

Which vector diagram shows the magnitude and direction of the wind velocity W?

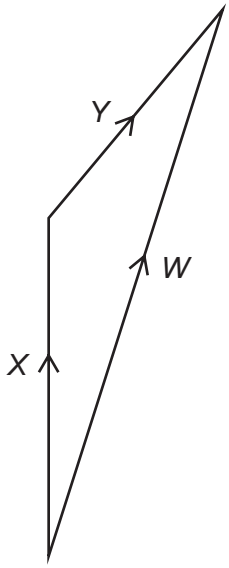
A



B



C



D