1 Which pair of quantities are physical quantities?

    A charge and ampere

    B efficiency and kilogram

    C pascal and strain

    D period and potential difference

2 Which list of unit prefixes decreases in magnitude from left to right?

    A centi, deci, milli

    B deci, milli, centi

    C pico, kilo, milli

    D kilo, milli, pico

3 The drag coefficient C_d is a number with no units. It is used to compare the drag on different cars at different speeds. C_d is given by the equation

$$C_d = \frac{2F}{v^n \rho A}$$

where F is the drag force on the car, ρ is the density of the air, A is the cross-sectional area of the car and v is the speed of the car.

What is the value of n?

    A 1   **B** 2   **C** 3   **D** 4

4 A micrometer screw gauge is used to measure the diameter of a small uniform steel sphere. The measurement of the diameter is 5.00 mm ± 0.01 mm.

What is the percentage uncertainty in the calculated volume of the sphere, using these values?

    A 0.2%   **B** 0.4%   **C** 0.6%   **D** 1.2%

5 Forces of magnitudes 2 N, 4 N and 7 N combine to produce a resultant force.

The magnitudes of the three forces are fixed, but the forces may act in any direction in the same plane.

What is **not** a possible magnitude of the resultant force?

    A 0 N   **B** 5 N   **C** 8 N   **D** 13 N