

- 1 (a) Distinguish between random error and systematic error in a set of measurements of a physical quantity.

.....

.....

.....

.....

.....

.....

.....

[2
]

- (b) The power P required by a car to overcome the drag force acting on it when it is travelling at a speed v in turbulent condition is given by the equation

$$P = k\rho A^p v^q$$

where A is the frontal area of the car and ρ is the density of the air.

Given that k is a quantity with no units, determine the values of p and q .

$p = \dots\dots\dots$

$q = \dots\dots\dots$ [3
]

[Total: 5]

