

1 (a) (i) Define *density*.

.....
..... [1]

(ii) State the base units in which density is measured

..... [1]

(b) The speed v of sound in a gas is given by the expression

$$v = \sqrt{\frac{\gamma p}{\rho}}$$

where p is the pressure of the gas of density ρ . γ is a constant.

Given that p has the base units of $\text{kg m}^{-1} \text{s}^{-2}$, show that the constant γ has no unit.

[3]

[Total: 5 marks]