

1 (a) (i) Define power.

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

(ii) Use the definition of power to show that the SI base units of power are $\text{kg m}^2 \text{s}^{-3}$.

[1]

(b) The intensity I of a sound wave moving through a gas is given by

$$I = f^2 A^2 v k$$

where f is the frequency of the wave,
 A is the amplitude of the wave,
 v is the speed of the wave
and k is a constant that depends on the gas.

Determine the SI base units of k .

SI base units [3]

[Total: 5]