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

....

.... [1]

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

[1]

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

$$I = f^2A^2vk$$

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

Determine the SI base units of k.

SI base units .... [3]

[Total: 5]