**1** **(a)** **(i)** State the SI base units of volume.

base units of volume ..... [1]

**(ii)** Show that the SI base units of pressure are $\text{kg m}^{-1}\text{s}^{-2}$.

[1]

**(b)** The volume $V$ of liquid that flows through a pipe in time $t$ is given by the equation

$$\frac{V}{t} = \frac{\pi P r^4}{8Cl}$$

where $P$ is the pressure difference between the ends of the pipe of radius $r$ and length $l$. The constant $C$ depends on the frictional effects of the liquid.

Determine the base units of $C$.

base units of $C$ ..... [3]