2 (a) State what is meant by a *mole*.

....

....

.... [2]

(b) Two containers A and B are joined by a tube of negligible volume, as illustrated in Fig. 2.1.

container A
$3.1 \times 10^3 \, cm^3$
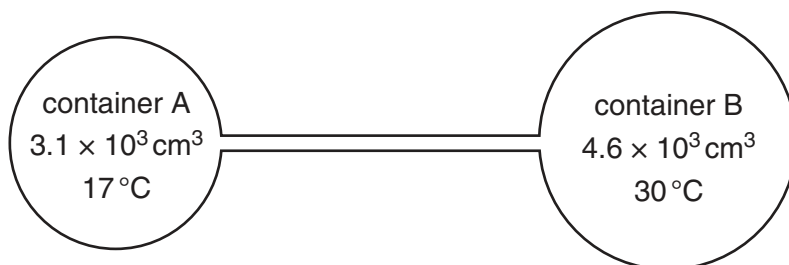$17\,°C$

container B
$4.6 \times 10^3 \, cm^3$
$30\,°C$

Fig. 2.1

The containers are filled with an ideal gas at a pressure of 2.3×10^5 Pa.
The gas in container A has volume $3.1 \times 10^3 \, cm^3$ and is at a temperature of $17\,°C$.
The gas in container B has volume $4.6 \times 10^3 \, cm^3$ and is at a temperature of $30\,°C$.

Calculate the total amount of gas, in mol, in the containers.

amount = ... mol [4]