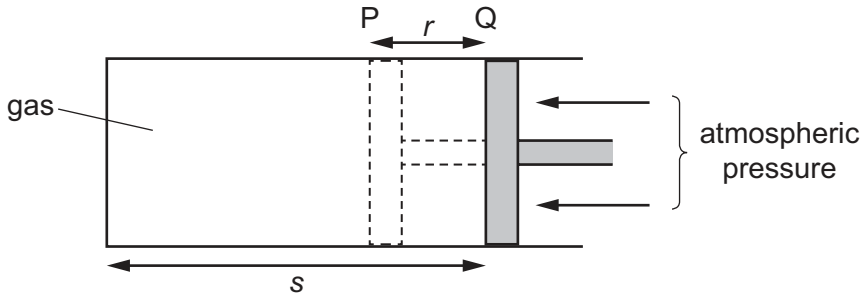
14 Gas is trapped inside a cylinder by a piston of cross-sectional area *A*. The piston is **not** frictionless.



The gas is heated and this causes it to expand, pushing back the piston through distance *r* from position P to position Q. The length of the gas column is then *s*.

Which expression represents the amount of work done by the gas against the atmosphere during this expansion?

A (atmospheric pressure) × *Ar*

B (atmospheric pressure) × *As*

C (pressure inside the gas) × *Ar*

D (pressure inside the gas) × *As*