* Example:

A cylinder contains a gas. The cylinder expands against the surroundings in which the pressure is 1 atm from 5 liter to 10 liter because a heat of 400 j is given to the system. What is the internal energy?

* Use the equations: work= pressure x dv, (1 atm liter = 101.33 J)

Solutuin:

The equation is ∆u = q-w

* Q is 400 j.
* V1 = 5 LITRE
* V2= 10 LITRE.
* Work = 1 atm x (10-5) liter = 5 liter atm
* (1 atm liter = 101.33 J)

∴  work = 5 x 101.33 = 506.65 J

∴ ΔU = Q –W = 400 j – 506.65 = -106.65 j