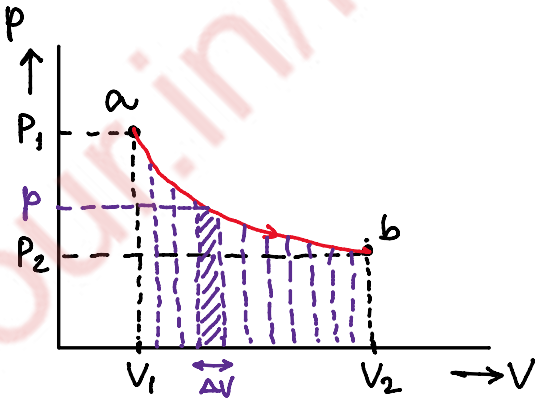
(b) when $p \neq$ const :

The area of each vertical strip represents workdone for the small change in volume.



Total area under p-V graph

= Sum of the area of all these vertical strips

$= \Delta W_1 + \Delta W_2 + \Delta W_3 + \cdots\cdots$

= Total work done

So, if $p \neq$ const, then the total area under the p-V curve is equal to the total work done.