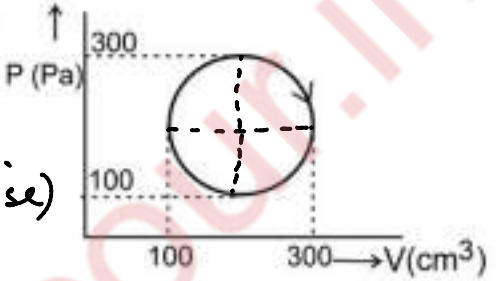
EXAMPLE: Calculate the work done in the cyclic process shown in the Fig.



W = +ive (clockwise)

W = total area within the cyclic curve

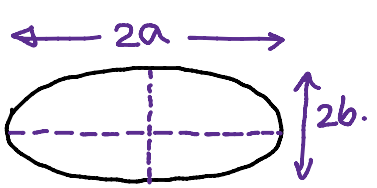
$2a = 200\,cm^3 \Rightarrow a = 100\,cm^3$

$a = 100 \times 10^{-6}\,m^3$

$2b = 200\,Pa \Rightarrow b = 100\,pa$

$W = \pi ab = 3.14 \times 100 \times 10^{-6} \times 100$

$= 3.14 \times 10^{-2}\,J$ (+ive)



area of ellipse $= \pi ab$

So, total work done by the system is $3.14 \times 10^{-2}\,J$.