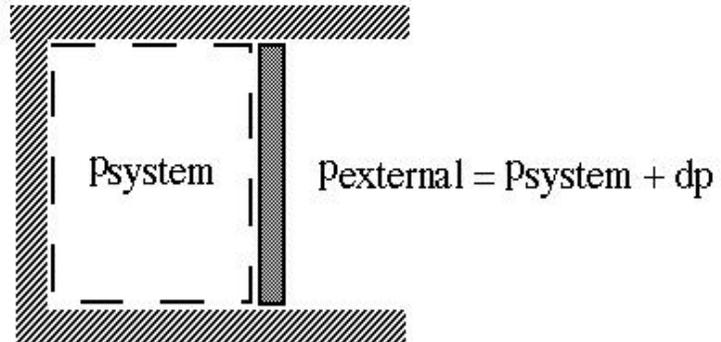


Chapter 7 Question #10

Gas in a piston-cylinder arrangement is slowly expanded while maintaining the temperature constant.

Which of the following is true?

- 1) $Q > W > 0$
- 2) $Q < W < 0$
- 3) $Q = W > 0$
- 4) $Q = W < 0$
- 5) I am not sure



Chapter 7 Question 10 Answer:

(3) $Q = W > 0$

From the First Law, $\Delta u = q - w$. $\Delta u=0$ since it is constant temperature is specified in the question and for an ideal gas $du=cvdT$. Therefore $q=w$. Since the system is expanding $W=Q > 0$.

Class response (2003):

