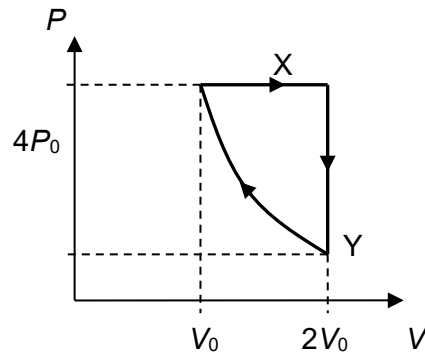


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A fixed mass of monatomic ideal gas undergoes a constant pressure expansion to double its initial volume. Its pressure is then reduced to a quarter of the original at constant volume. The gas is then returned to its initial state in the process shown in the P – V diagram below.



Which of the following statements about the processes is **not** necessarily true?

A

There is no heat exchange in process Z.

B

Work done by the gas in process X is $4P_0V_0$.

C

Heat is removed from the system in process Y.

D

Temperature of the gas is doubled in process X.