

1.31 A gas contained within a piston-cylinder assembly undergoes four processes in series:

Process 1-2: Constant-pressure expansion at 1 bar from $V_1 = 0.5 \text{ m}^3$ to $V_2 = 2 \text{ m}^3$

Process 2-3: Constant volume to 2 bar

Process 3-4: Constant-pressure compression to 1 m^3

Process 4-1: Compression with $pV^{-1} = \text{constant}$

Sketch the process in series on a p - V diagram labeled with pressure and volume values at each numbered state.

