Answer on Question #64477, Physics / Molecular Physics | Thermodynamics

2 moles of air when heated though 10 k expand by 1.66 x 10 power -3 under a constant pressure 10 power 5 newton per meter square. if cv = 20.81 jmole k then cp is

Find: c_p - ?

Given:

c_v = 20.81 J/mol×K

R=8.31 J/mol×K

Solution:

Air is an ideal gas.

Mayer's formula:

$c_p - c_V = R$ (1),

where R is gas constant

Of (1) $\Rightarrow$ $c_p = c_V + R$ (2)

Of (2) $\Rightarrow$ c_p=29.12 J/mol×K

Answer:

c_p=29.12 J/mol×K