The ideal gas law is the equation of state of a hypothetical ideal gas. It is a good approximation to the behaviour of many gases under many conditions, although it has several limitations. The ideal gas law is often introduced in its common form:It’s possible to solve this task by using next formula:

PV=nRT, where:

P – Pressure

V – Volume

T – Temperature

R – Gas constant

n – Amount

In this task n and R are constants, but P,V and T are different,so

$nR= P_1V_1/T_1$, and

$nR= P_2V_2/T_2$,so

$(P_1V_1)/T_1=(P_2V_2)/T_2$, where:

The new pressure is P_2, and it is:

$P_2 = (P_1V_1\ T_2)/T_1V_2$

P_2 = 689 * 250 * (273+45) / (273+95) * 150 = 992 mm Hg

The new pressure is 992 mm Hg.