Oxygen gas kept at 45.00 degrees Celsius has a pressure of 105.0 kPa. The pressure is decreased to 90.00 kPa. What temperature will allow this to happen?

Answer

In accordance with Ideal gas law we have the following system of equation:

$n*R*T = p*V$

$n*8,314*(45+273,15) = 105*10^3*V$ (1)

$n*8,314*T = 90*10^3*V$ (2)

Hence, T = 272,7 K = - 0,5 C