Problem 11.1

What is the change in entropy when 0.7 m^3 of CO_2 and 0.3 m^3 of N_2, each at 1 bar and 25 °C blend to form a gas mixture at the same conditions? Assume ideal gases.

Solution:

helo

Label CO_2 and N_2 as (1) and (2) respectively
$V_1 = 0.7$ m^3 $V_2 = 0.3$ m^3

For ideal gases it follows that:
$x_1 = 0.7$ $x_2 = 0.3$

P = 1 bar T = 298.15 K