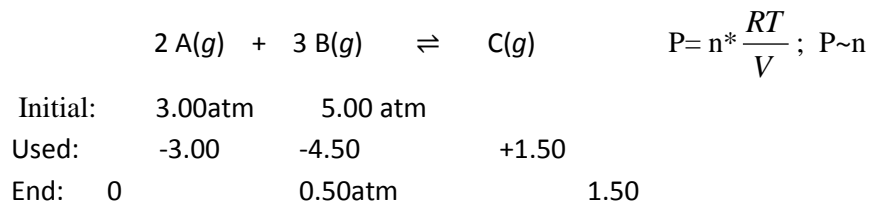


Discussion Quiz #3

KEY

1. (4 points) The chemical reaction  $2 A(g) + 3 B(g) \rightleftharpoons C(g)$  is carried out in a rigid container at a constant temperature of  $28.7^\circ\text{C}$ . At the start of the reaction, 3.00 atm of A and 5.00 atm of B are added to the container, for a total pressure of 8.00 atm. What will be the total pressure in the container at the end of the reaction?

**A is a L.R**



$$P_{\text{total}} = 2.00 \text{ atm}$$

2. (3 points) At a certain temperature,  $T_1$ , and pressure,  $P_1$ , a 1.0 mole sample of gaseous acetaldehyde has a root mean square velocity of  $u_{\text{rms},1}$  inside a closed container. The pressure inside of the container is increased by a factor of four,  $P_2 = 4P_1$ , at constant temperature. Circle the correct relationship between the initial rms velocity,  $u_{\text{rms},1}$ , and the final rms velocity,  $u_{\text{rms},2}$ .

$u_{\text{rms},1} = u_{\text{rms},2}$      $u_{\text{rms},1} = (1/2) u_{\text{rms},2}$      $u_{\text{rms},1} = (1/4) u_{\text{rms},2}$

$u_{\text{rms},1} = (1/16) u_{\text{rms},2}$      $u_{\text{rms},1} = 2 u_{\text{rms},2}$      $u_{\text{rms},1} = 4 u_{\text{rms},2}$

$u_{\text{rms},1} = 16 u_{\text{rms},2}$     None of these

3. (3 points) At a certain temperature,  $T_1$ , and pressure,  $P_1$ , a 2.0 mole sample of gaseous acetaldehyde has a root mean square velocity of  $u_{\text{rms},3}$  inside a closed container. The temperature inside of the container is increased by a factor of four,  $T_2 = 4T_1$ . Circle the correct relationship between the initial rms velocity,  $u_{\text{rms},1}$ , and the final rms velocity,  $u_{\text{rms},2}$ .

$u_{\text{rms},1} = u_{\text{rms},2}$      $u_{\text{rms},1} = (1/2) u_{\text{rms},2}$      $u_{\text{rms},1} = (1/4) u_{\text{rms},2}$

$u_{\text{rms},1} = (1/16) u_{\text{rms},2}$      $u_{\text{rms},1} = 2 u_{\text{rms},2}$      $u_{\text{rms},1} = 4 u_{\text{rms},2}$

$u_{\text{rms},1} = 16 u_{\text{rms},2}$     None of these

## Discussion Quiz #3

KEY

- $A_r(\text{Na})=23\text{g/mol}$