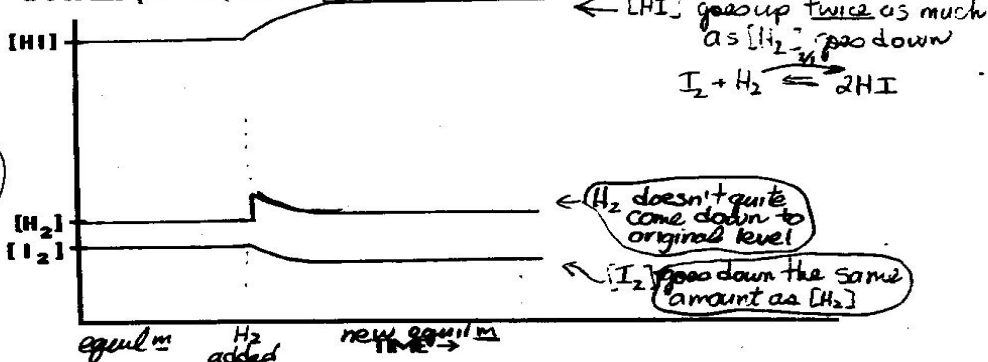


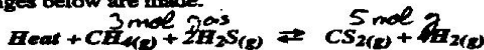
KEY

f) Sketch a graph of the relative concentrations of each species as the process outlined in a-e of this question (on the last page) is carried out.



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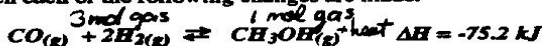
8. Consider the following equilibrium and state which way (left or right) the equilibrium shifts when each of the changes below are made.



- a) CH<sub>4</sub> gas is added ..... Answer right
- b) CS<sub>2</sub> gas is removed ..... Answer right
- c) H<sub>2</sub> gas is added ..... Answer left
- d) The total volume of the container is decreased ..... Answer left  
*(press increased)*
- e) The temperature is increased ..... Answer right
- f) The total pressure is decreased ..... Answer right (more mols gas)
- g) Helium gas is added to increase the total pressure ..... Answer no shift

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9. Using the following equilibrium, state what would happen to the equilibrium partial pressure of CH<sub>3</sub>OH gas when each of the following changes are made:



- a) CO gas is added to the container ..... Answer P<sub>CH<sub>3</sub>OH</sub> increases (shifts right)
- b) The temperature is increased ..... Answer P<sub>CH<sub>3</sub>OH</sub> decreases (shifts left)
- c) The total pressure of the system is increased ..... Answer P<sub>CH<sub>3</sub>OH</sub> increases (shifts right)

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