1)

$CH_{4(g)}$	+ $H_2O_{(g)}$	⇌ $CO_{(g)}$	+ $3 H_{2(g)}$
initial moles	1	1	0	0
change in moles	**-0.4**	**-0.4**	**+0.4**	**+1.2**
equilibrium moles	**0.6**	**0.6**	0.4	**1.2**

2)

$N_{2(g)}$	+ $3 H_{2(g)}$	⇌ $2 NH_{3(g)}$
initial moles	0.1	0.1	0
change in moles	**-0.03**	**-0.09**	**+0.06**
equilibrium moles	0.07	**0.01**	**0.06**

3)

$H_{2(g)}$	+ $I_{2(g)}$	⇌ $2 HI_{(g)}$
initial moles	10	10	0
change in moles	**-7**	**-7**	**+14**
equilibrium moles	3	**3**	**14**

4)

$CO_{2(g)}$	+ $3 H_{2(g)}$	⇌ $CH_3OH_{(g)}$	+ $H_2O_{(g)}$
initial moles	1	1	0	0
change in moles	**-0.2**	**-0.6**	**+0.2**	**+0.2**
equilibrium moles	**0.8**	**0.4**	0.2	**0.2**

5)

$2 SO_{2(g)}$	+ $O_{2(g)}$	⇌ $2 SO_{3(g)}$
initial moles	2	2	0
change in moles	**-0.7**	**-0.35**	**+0.70**
equilibrium moles	**1.3**	**1.65**	0.7

6)

$PCl_{5(g)}$	⇌ $PCl_{3(g)}$	+ $Cl_{2(g)}$
initial moles	1	1	1
change in moles	**-0.8**	**+0.8**	**+0.8**
equilibrium moles	**0.2**	1.8	**1.8**

7)

$CH_{4(g)}$	+ $H_2O_{(g)}$	⇌ $CO_{(g)}$	+ $3 H_{2(g)}$
initial moles	1	1	1	1
change in moles	**-0.2**	**-0.2**	**+0.2**	**+0.6**
equilibrium moles	**0.8**	**0.8**	**1.2**	1.6

8)

$N_{2(g)}$	+ $3 H_{2(g)}$	⇌ $2 NH_{3(g)}$
initial moles	10	0	10
change in moles	**+0.5**	**+1.5**	**-1,0**
equilibrium moles	**10.5**	**1.5**	9

9)

$2 H_{2(g)}$	+ $CO_{(g)}$	⇌ $CH_3OH_{(g)}$
initial moles	0.5	0.5	0
change in moles	**-0.4**	**-0.2**	**+0.2**
equilibrium moles	0.1	**0.3**	**0.2**

10)

$SO_2Cl_{2(g)}$	⇌ $CH_3OH_{(g)}$	+ $Cl_{2(g}$
initial moles	2.0	0	0
change in moles	**-0.4**	**+0.4**	**+0.4**
equilibrium moles	**1.6**	0.4	**0.4**

11)

$2 H_{2(g)}$	+ $CO_{(g)}$	⇌ $CH_3OH_{(g)}$
initial moles	1.2	2.0	0
change in moles	**-0.4**	**-0.2**	**+0.2**
equilibrium moles	**0.8**	1.8	**0.2**

12)

$CO_{2(g)}$	+ $3 H_{2(g)}$	⇌ $CH_3OH_{(g)}$	+ $H_2O_{(g)}$
initial moles	1.0	1.0	0	0
change in moles	**-0.3**	**-0.9**	**+0.3**	**+0.3**
equilibrium moles	0.7	**0.1**	**0.3**	**0.3**

13)

$2 A$	+ B	⇌ C	+ $3 D$
initial moles	5.0	10.0	0	0
change in moles	**-1.0**	**-0.5**	**+0.5**	**+1.5**
equilibrium moles	**4.0**	**9.5**	0.5	**1.5**

14)

A	+ $3 B$	⇌ $2 C$	+ D
initial moles	2.0	1.0	0	0
change in moles	**-0.2**	**-0.6**	**+0.4**	**+0.2**

equilibrium moles   **1.8**   0.4   **0.4**   **0.2**