Name: KEY Official Class: _____ Date: _____

Teacher: _____ Period: _____ Class: _____

Le Châtelier's Principle Practice

Directions: Complete the chart below by writing either left, right, no shift in the equilibrium column, and either increase, decrease, or no change in the reactant and product column.

Add Away Take Toward

4 mol gas 2 mol gas

$N_2(g) + 3H_{2(g)} \leftrightarrow 2NH_{3(g)} + 91.8\ kJ$

Stress	Equilibrium Shift	$[N_2]$	$[H_2]$	$[NH_3]$
1. Add N_2	→	———	↓	↑
2. Add H_2	→	↓	———	↑
3. Add NH_3	←	↑	↑	———
4. Remove N_2	←	———	↑	↓
5. Remove H_2	←	↑	———	↓
6. Remove NH_3	→	↓	↓	———
7. Increase temperature (energy)	←	↑	↑	↓
8. Decrease temperature (energy)	→	↓	↓	↑
9. Increase pressure	→	↓	↓	↑
10. Decrease pressure	←	↑	↑	↓

2 mol gas 2 mol gas

$53\ kJ + H_2(g) + I_2(g) \leftrightarrow 2HI(g)$

Stress	Equilibrium Shift	$[H_2]$	$[I_2]$	$[HI]$
1. Add H_2	→	———	↓	↑
2. Add I_2	→	↓	———	↑
3. Add HI	←	↑	↑	———
4. Remove H_2	←	———	↑	↓
5. Remove I_2	←	↑	———	↓
6. Remove HI	→	↓	↓	———
7. Increase temperature (energy)	→	↓	↓	↑
8. Decrease temperature (energy)	←	↑	↑	↓
9. Increase pressure	NO EFFECT			
10. Decrease pressure				

same # mol gas on both sides