



LE CHATELIER'S PRINCIPLE 2

1)

Equilibrium	ΔH	Increase temperature			Increase pressure			Remove some of B		
		moves left	no move	move right	moves left	no move	move right	moves left	no move	move right
$2 A(g) + B(g) \rightleftharpoons X(g) + Z(g)$	exothermic	✓					✓	✓		
$A(g) + B(g) \rightleftharpoons X(g) + Z(g)$	endothermic			✓		✓		✓		
$B(g) \rightleftharpoons X(g) + Z(g) + Y(g)$	exothermic	✓			✓			✓		
$X(g) + Y(g) \rightleftharpoons 2 B(g)$	exothermic	✓				✓				✓
$2 X(g) \rightleftharpoons 2 A(g) + B(g)$	endothermic			✓	✓					✓

2) a) i) One in which no chemicals can get in or out

ii) both reactions taking place simultaneously at the same rate
all reactants and products are present
concentrations remain constant

b) i) decreases

ii) equilibrium position shifts left, in endothermic direction to lower the temperature

c) i) increases

ii) equilibrium position shifts right, to side with less gas molecules to lower the pressure

d) i) increases

ii) equilibrium position shifts right, to remove the added oxygen

3) NaOH reacts with HCl and removes it; equilibrium shifts right to replace lost HCl; therefore more BiOCl white precipitate formed