

Multiple Choice Response Sheet

Name: _____

1. D ✓

2. D ✓

3. C ✓

4. D ✓

5. A ✓

6. A ✓

7. D ✓

8. C ✓

9. B ✓

10. C ✓

11. B ✓

12. C ✓

13. A ✓

14. B ✓

15. B ✓

16. B ✓

17. B ✓

18. B ✓

⇒
43

19. B ✓

20. B ✓

21. D ✓

22. C ✓

23. ~~C~~

24. D ✓

25. C ✓

26. D ✓

27. A ✓

28. A ✓

29. C ✓

30. B ✓

31. ~~B~~ B

32. ~~B~~ D

33. B

34. _____

35. _____

36. _____

$$1. a) K_{eq} = \frac{[NO_2]^2}{[N_2O_4]} = \frac{(0.65)^2}{(0.60)} = 0.70.$$

$$b) K_{eq} = \frac{(0.63)^2}{(0.61)} = 0.65$$

c) temperature was decreased.

Explanation: K_{eq} changed. \therefore the stress is temperature.

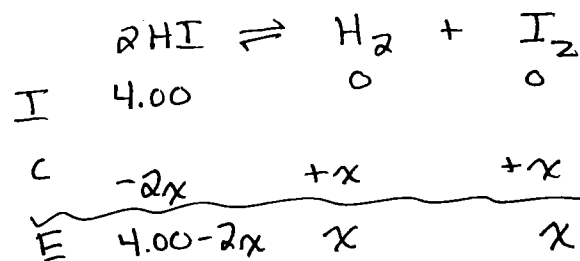
Since $[NO_2] \downarrow$ and $\uparrow [N_2O_4]$, the endothermic reaction shifted left. A DECREASE in temperature would cause this shift.

OR

There are no drastic/sudden changes in $[\]$'s at the time of the stress \therefore NO_2 nor N_2O_4 were added.

and there were no volume changes. It is \therefore a temperature stress. Since $[NO_2] \downarrow$ & $\uparrow [N_2O_4]$, the endothermic reaction shifted left. A temperature decrease would cause this

$$2. K_{eq} = \frac{[H_2][I_2]}{[HI]^2} = 81.0$$



$$\sqrt{\frac{(x)(x)}{(4.00-2x)^2}} = \sqrt{81.0}$$

$$x = 9(4.00 - 2x)$$

$$x = 36 - 18x$$

$$19x = 36$$

$$x = 1.8947\dots$$

$$\begin{aligned} [HI] &= 4.00 - 2x \\ &= 4.00 - 2(1.8947\dots) \\ &= 0.21052\dots \end{aligned}$$

$$[HI] = 0.21 M$$

3.

$$K_{eq} = \frac{[HI]^2}{[H_2][I_2]} = 64$$

equal
moles?

Try 2.0 moles!

$$Q = \frac{(2.0 \text{ mol/L})^2}{(2.0 \text{ mol/L})(2.0 \text{ mol/L})}$$
$$= 1$$

$Q < K_{eq}$ ∴ the reaction will
proceed to the right.

