

Announcements

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).

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Review (Chp 13)

- Catabolism

- Carbohydrates, Proteins, Lipids converted to pyruvate then to Acetyl CoA which passes into Krebs Cycle where CO_2 and H_2O are produced along with $\text{ADP} \rightarrow \text{ATP}$
- Example of glycolysis: steps with $\Delta G > 0$ driven by coupling to $\text{ATP} + \text{H}_2\text{O} \rightarrow \text{ADP} + \text{HPO}_4^{2-}$, where $\Delta G < 0$
- Can tell whether process stores energy for organism by counting number of $\text{ATP} \rightarrow \text{ADP}$ vs $\text{ADP} \rightarrow \text{ATP}$.

- DNA (deoxyribonucleic acid)

- Sugar backbone
- Bases on each sugar forms a double helix with bases pairing by H-bonding (A—T and C—G)
- DNA transcribed to mRNA (decoded by ribosomes to make proteins)

Review (Chp 14)

- Kinetics is the study of the time variation of concentrations in systems of chemical reactions.
- Example: smog shows variation of which species are present versus time.
- Example: $A \rightarrow 2 B + C$
 - Average rate = $R = (1/2)\Delta[B]/\Delta t = \Delta[C]/\Delta t = -\Delta[A]/\Delta t$
 - Instantaneous rate is the slope of the concentration versus time curve at a particular time (slope of tangent).

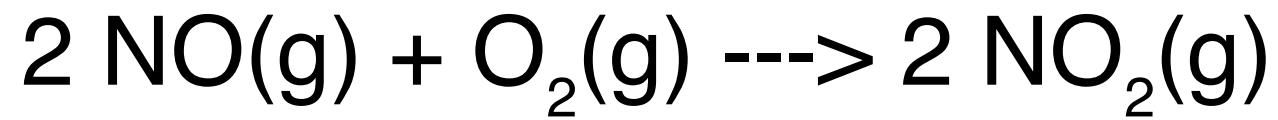
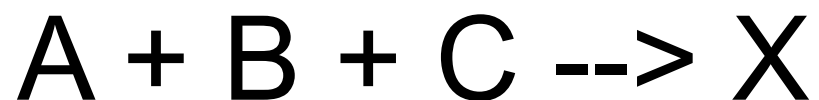


Figure 14.4

Initial Rate Data for RXN:



$(d[X]/dt)_0$	$[A]_0$	$[B]_0$	$[C]_0$
1.0 M/s	10.0	10.0	0.01
4.0 M/s	10.0	10.0	0.02
16.0 M/s	10.0	10.0	0.04
2.0 M/s	20.0	10.0	0.01
4.0 M/s	40.0	10.0	0.01
1.0 M/s	10.0	100.0	0.01