

### Summary of Mathematical Questions 1, 2, and 3

**With the new format of the exam in 2007 and the availability of both questions and answers on the web at AP Central (<http://apcentral.collegeboard.com:80/apc/public/courses/4606.html>), I have determined not to update this page any longer. Please create an account as a teacher at AP Central and navigate to the full exams and scoring rubrics which are available back to 2003**

Beginning in 2007, there is no longer a choice between questions 2 and 3.  
BOTH are now required.

2008	(1) Gaseous Equilibrium	(2) Gravimetric analysis (3) Electrochemistry/kinetics
2007	(1) Acid/Base	(2) Thermodynamics (3) Electrochemistry/voltaic cell
2006	(1) Precipitation	(2) Thermodynamics (3) Empirical formula from combustion, MW from Ideal Gas Law, molecular formula
2005	(1) Acid/Base	(2) Combustion analysis, empirical formula, freezing point determination of molecular weight (3) Kinetics
2004	(1) Precipitation	(2) Thermodynamics (3) Reaction rates with spectrophotometer
2003	(1) Acid/Base	(2) Gas Laws (3) Kinetics/Electrochemistry
2002	(1) Acid/Base Equilibrium, Titration, Buffer	(2) Stoichiometry, Electrochemistry, Thermodynamics
2001	(1) Precipitation	(2) Thermodynamics, bond energy (3) Combustion analysis, acid/base titration
2000	(1) Gaseous Equilibrium	(2) Electrochemistry, thermodynamics (3) Hydrated crystal, redox titration
1999	(1) Acid/Base	(2) Calculations with light. Frequency, wavelength, energy transitions (3) Kinetics
1998	(1) Precipitation	(2) % Composition, Freezing Pt, Colligative Properties (3) Thermodynamics, Gas Law

1997	(1) Acid/Base	(2) Electrochemistry (3) Kinetics
1996	(1) Acid/Base, Buffer	(2) Thermodynamics (3) Solution concentrations, acid-base titration
1995	(1) Gas Equilibrium	(2) Gas stoichiometry, heat of reaction (3) Decomposition of solid carbonates
1994	(1) Precipitation	(2) Rate Law, Mechanisms (3) Gas Laws
1993	(1) Acid/Base	(2) Empirical formula, colligative prop. (3) Oxidation-Reduction Titration
1992	(1) Gas Equilibrium	(2) Electrochemistry, thermodynamics (3) Thermodynamics, enthalpy and entropy
1991	(1) Acid/Base, Buffer	(2) Empirical Formula, Freezing pt (3) Rate Law, Mechanisms
1990	(1) Precipitation	(2) Gas Laws, Stoichiometry (3) Thermodynamics
1989	(1) Acid/Base	(2) Electrolysis (3) Thermodynamics
1988	(1) Gas Equilibrium	(2) Thermodynamics (3) Electrolysis
1987	(1) Acid/Base/Precipitation	(2) Rate laws (3) Acid-base titration
1986	(1) Acid/Base	(2) Redox/electrolysis (3) Empirical formula
1985	(1) Precipitation	(2) Redox/electrolysis (3) Freezing pt depression Empirical formula
1984	(1) Acid/base	(2) Rates (3) Thermodynamics
1983	(1) Gas Equilibrium	(2) Thermodynamics (3) Acid-base titration
1982	(1) Buffer solution	(2) Redox/electrolysis (3) Empirical formula
1981	(1) Gas Equilibrium	(2) Rates

### (3) Redox titration