

**Math 29**  
**Review for Final**

Make sure you can do the following types of problems.

1. Use your calculator to estimate large and small numbers. Raise the number to a smaller power, put it in scientific notation, and distribute the remaining power.
2. Scaling problems
3. Percent and Proportion Problems
4. Concentration Problems
5. Compute Mean, error, percent error, deviation, percent deviation
6. Use the Basic Sampling Principle
7. Estimate the number of different possibilities for a quantity. For example, how many credit card numbers are possible
8. Do arithmetic with significant figures
9. Unit conversions
  - a) Make sure that units either cancel or agree on both sides of an equation
  - b) When using square or cubic units, you must square or cube the conversion factor
10. Apply the rules of exponents and logs
11. Solve equations involving logs
12. Apply logs to problems about pH, doubling, and half-life
13. Compound interest both continuous and compounded  $N$  times per year
14. Present and future value including problems with multiple payments like scholarship payments

15. Use the geometric sum formula
16. Summation notation
17. Trigonometry problems
18. Average rates of change and slope of a secant line
19. Instantaneous rates of change and slope of a tangent line
20. The meaning of the derivative
21. Graphical derivatives
22. Basic rules of differentiation
23. Product, quotient, and chain rules
24. Using derivatives to graph functions
25. Optimization problems