Exam 1 Review **February 2024**
Calculus I **Prof. Nollet**

Look at home work, quizzes and examples from class. If you got things wrong on homework or quizzes, figure out what and why. Practice is most important! Can you do similar problems without your book? The book has review problems at the end of each chapter to look at.

Exam 1 covers Chapter 1 and Chapter 2, at least 2/3 weight on Chapter 2.

A3 Lines and slopes, slope-intercept form of equation, point-slope form of equation, parallel and perpendicular lines.

1.1 Intercepts, functions and graphs, domain, piecewise defined functions.

1.3 Radian measure of angles, the unit circle, the six trig functions, using triangles to evaluate trig functions.

1.5 Exponential function $f(x) = b^x$ and its graph, laws of exponents.

1.6 finding inverse functions, connection between graphs, domains and ranges, inverse function $g(x) = \log_b x$ to exponential function $f(x) = b^x$ ($\ln x$ and e^x), inverse trig functions, solving logarithmic and exponential equations using inverses.

2.2 Concept of limit, estimating limits from graphs, estimating limits numerically (with calculator), calculating limits with algebra, including algebraic limit rules, factoring, multiplying by the conjugate, limits of $\sin x$ and $\cos x$ at $x = 0$.

2.4 Left/right limits, connection to 2-sided limits, using limit $\lim\limits_{\theta \to 0} \dfrac{\sin \theta}{\theta} = 1$.

2.5 Definition of continuity, graphical interpretation of continuity, checking continuity algebraically by checking left/right limits and function value.

2.6 Limits at infinity and infinite limits, be careful about the sign, vertical asymptotes and horizontal asymptotes, use of algebra limit rules.