IMP Final Exam: Main Math Topics

Derivatives

Know how to state and use the definition of the derivative.

Know the derivative rules.

Know how to do implicit differentiation.

Know how to do related rates and applied max/min problems.

Know how to do sketch curve using intercepts, asymptotes, extrema, and concavity.

Integrals

Know the integral rules.

Know how to compute $\int_a^b f(x)dx$ using the formal definition (as a limit of a sum).

Know u-sub, int by parts, powers of trig functions, trig sub, and partial fractions.

Know how to use a definite integral to compute the area between curves.

Know how to use a definite integral to compute the volume of a solid of revolution.

Know how to evaluate the improper integrals.

Differential Equations

Know how to solve separable differential equations.

Know how to solve 2nd-order linear homogeneous DEs with constant coefficients.

Vectors and Motion in the Plane

Find sums, differences, scalar multiples, and magnitude graphically and via components.

Find components of a vector given the endpoints, and given the magnitude and direction.

Compute velocity $\mathbf{v}(t)$, acceleration $\mathbf{a}(t)$, and speed $\frac{ds}{dt}$ of a moving particle

Some Suggestions

Study old quizzes and tests.

Study sample problems from your notes.

Do the practice exam.