Test 2 Outline

3.9  – Basic idea of an antiderivative
    – Rules for antiderivatives (memorize!)
    – Basic application problems involving position, velocity, and acceleration

4.1  – Estimating area under curves
    – Area as limit of sum

4.2  – Meaning of definite integral for \( f(x) \geq 0 \) and \( f(x) < 0 \)
    – Definite integral as area
    – Basic properties of definite integral

4.3  – FTC 1
    – Relationship between antiderivatives and definite integrals (FTC 2)
    – Using FTC 2 to evaluate definite integrals

4.4  – Meaning of indefinite integral
    – Formulas for indefinite integrals (memorize)

4.5  – Technique of integration via u-substitution

6.2  – Properties of exponential functions
    – Natural exponential function
    – Derivative/integral of natural exponential function

6.3  – Properties of logarithmic functions
    – Relation between log functions and exponentials
    – Natural logarithmic function

6.4  – Differentiation/integration rules involving logarithmic and exponential functions
    – Use of rules in combination with u-substitution (for integration) or product/quotient/chain rules (for differentiation)