

CH.5 REVIEW

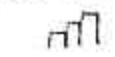

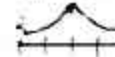
(5.1) Indefinite \int
 $\int f(x)dx = F(x) + C$
 Power, Trig, \int linearity
 Diff. eqs.

(5.2) u subs

(5.4/5.3) Definite \int
 $\int_a^b f(x)dx = \#$, Defⁿ: $\lim_{n \rightarrow \infty} \sum_k f(u_k) \Delta x_k$ ^{in k^{th} subinterval}
 signed areas, Geometry
 Approx. by LRA, MRA, RRA

(5.5) Props. of \int
 MVT, fav

(5.6) FTC
Part II Evaluate $\int_a^b f(x)dx$
 u subs $\Rightarrow \int_c^d g(u)du$
Part I $D_x (\int_a^x f(t)dt) = f(x)$

(5.7) Numerical Approx of $\int_a^b f(x)dx$
 If can't find F, or have f table
 Before: LRA, MRA, RRA 
 Trapezoidal Rule 
 Simpson's Rule 
 (Mathematically break down intervals where F changing rapidly)