MATH 16020 Lesson 4: Integration by Parts I

Spring 2021

Integration by Substitution: Stems from _____

Integration by Parts: Stems from _____

Why do we care? _____

Example 1. Use integration by parts to evaluate $\int x \ln(x)\, dx$.

How to choose u in general?

Example 2. Evaluate the following using integration by parts:

A. $\int x\cos(x)\ dx$

B. $\int \frac{x^3}{\sqrt{1+x^2}}\,dx$

C. $\int \frac{(\ln(2x^5))^2}{x^2}\,dx$

D. $\int_3^4 x(x-3)^7 \, dx$

E. $\int (2x+1)e^{-x} \, dx$ (TIME PERMITTING)