

7.1 - Integration by Parts

Preparation (Watch at Home)

7.1a

ruledgap25

The integration by parts formula

$$\int u \, dv = uv - \int v \, du$$

Exercises:

Evaluate the integral.

7.1b

$$\int y e^{0.2y} \, dy$$

$$\int \ln x \, dx$$

7.1c

$$\int e^{-\theta} \cos 2\theta \, d\theta$$

In-Class Discussion

7.1d

$$\int_0^1 (x^2 + 1) e^{-x} dx$$

7.1e

$$\int_1^{\sqrt{3}} \arctan\left(\frac{1}{x}\right) dx$$

In-Class Practice

Evaluate the integral.

1. $\int t^2 \sin \beta t \, dt$

2. $\int_1^2 w^2 \ln w \, dw$

3. $\int_1^2 \frac{(\ln x)^2}{x^3} \, dx$

4. $\int_0^t e^s \sin(t-s) \, ds$

5. $\int e^{3\theta} \sin \theta \, d\theta$