Calculus II

FINAL EXAM REVIEW SHEETS / 8 pages / 16 worked ideas

01 CHOOSE AN INTEGRATION METHOD

Look for an inside function and its derivative first.

u-substitution

RULE

$$u = g(x), \quad du = g'(x)dx$$

DECISION CUE / TRAP

Change limits too when the integral is definite.

TRY IT

$$\int_0^1 2x(x^2+1)\,dx$$

WORKED STEP

$$u = x^2+1 : 1 \to 2; \quad \int_1^2 u\,du = 1.5$$

COVER & RECALL / REDO THE EXAMPLE WITHOUT LOOKING

Integration by parts

RULE

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

DECISION CUE / TRAP

Choose u to simplify after differentiating.

TRY IT

$$\int_0^1 xe^x\,dx$$

WORKED STEP

$$[xe^x - e^x]_0^1 = 1$$

COVER & RECALL / REDO THE EXAMPLE WITHOUT LOOKING

SAMPLE

Watermarked sample - full pack has 8 pages and 16 worked ideas