

Mr. G's Integration Tips

Is the function in a standard form?

eg one of the trig functions,

exponential function, log function, algebraic etc.

Is the integrand of the form $f'(x) / f(x)$?

$f'(x) / f(x)$ then integral will be of the form $\ln |f(x)|$

Is the integrand of the form $f'(x) [f(x)]^n$?

Just integrate $[f(x)]^n$, differentiate your answer and adjust.

Can the integrand be written in the form $\frac{ax + b}{(x + c)(x + d)}$?

Use partial fractions to simplify into separate fractions and use standard forms to resolve.

Is the integrand a product of two distinct functions?

Use integration by parts $\int u \, dv = uv - \int v \, du$

Choose u for the function that can be easily differentiated and reduced to a constant.

Is the integrand a trig function that can be replaced by a standard expression?

Know your standard trig identities.

Can you simplify the integral by changing the variable?

Simplify the integrand with a substitution.

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