

Computational Methods in Physics (PHY 365)

FA23

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Lab 16

MATLAB's int function

- `int(expr , var)` computes the **indefinite** integral of “expr” with respect to the **symbolic** scalar variable “var”.
 - ◇ Specifying the variable is optional.
 - ◇ If the variable is not specified, the function `int` uses the default variable determined by `symvar`.
 - ◇ If `expr` is a constant, then the default variable is `x`.

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- `int(expr , var , a , b)` computes the **definite** integral of the expression with respect to the variable from “a” to “b”.

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 - ◇ If `expr` is a constant, then the default variable is `x`.
- `int(expr , var , a , b)` computes the **definite** integral of the expression with respect to the variable from “a” to “b”.
- `int(___, Name , Value)` uses additional options specified by one or more `Name,Value` pair arguments.

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- **The integral**

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int_int = int(f);
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- **Displaying the result**

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disp(['The result is ', char(int_int)])
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int_int = int (f , x , 0 , 2);
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int_int = int (f , x , 0 , 2);
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- **Displaying the result**

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disp( ['The result is ', char(int_int) ] )
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MATLAB's `int` function

- The integrand has a **pole** in the interior of the interval of integration.
 - ◇ Mathematically, this integral is not defined.
- The **Cauchy principal value** of the integral exists.
 - `int_int = int (f, x, 0, 2, 'PrincipalValue', true);`

References

- <https://www.mathworks.com/help/symbolic/int.html>