

# Mathematica Reference Sheet for Physics

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This PDF contains instructions on how to use Mathematica to do mathematical calculations that I've used at least somewhat frequently while doing my undergraduate physics degree. Still a work in progress. You are free to use/edit it as you see fit.

## 1 Integration

### Definite Single Integral:

Example:  $\int_1^4 \frac{x^2+y^2}{2\pi} dy = \frac{21}{2\pi} + \frac{3x^2}{2\pi}$

In Mathematica:

```
Integrate[ (x^2 + y^2)/(2*Pi), {y, 1, 4} ]
```