First Steps in LaTeX

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1 Plain text

Plain text is easy [1], we just enter it the way would normally.

1.1 Maths in plain text

We can also include some maths in plain text, like this: $d = \sqrt{x^2 + y^2}$.

2 Equations

Larger equations are usually put on separated lines

$$M\frac{d^2x}{dt^2} = k(x_0 - x) - \Gamma\frac{dx}{dt}, \tag{1}$$

where equation (1) is nothing but Newton's equation for a damped oscillator.

We can also used partial differential operators

$$\frac{\partial\phi}{\partial t} = K\frac{\partial^2 x}{\partial x^2}. \tag{2}$$

Equation (2) is called the diffusion equation.

We can also allign 2 or more equations on their equal signs:

$$\begin{aligned}(\sin(\theta) + \cos(\theta))^2 &= \sin^2(\theta) + \cos^2(\theta)) + 2\sin(\theta) + \cos(\theta) \\ &= 1 + 2\sin(\theta)\cos(\theta)\end{aligned} \tag{3}$$

3 Figures

Figures are nice an easy too:

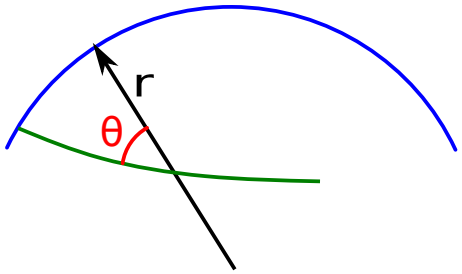

Figure 1: An illustrative graphic

4 Tables

Tables a bit more tedious to do:

Value (left justified)	Square (centered)	Exponential (right justified)
2	4	e^2
x	x^2	e^x
$x + y$	$(x + y)^2$	e^{x+y}
$\sin(y)$	$\sin^2(y)$	$\exp(\sin(y))$

but they also look very nice.

References

[1] Leslie Lamport *LaTeX: A Document Preparation System* (1994) Addison-Wesley