

Chapter 1

Latex Introduction & Applications

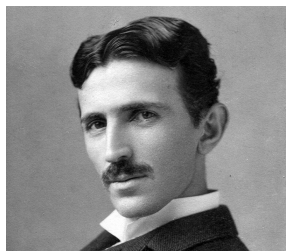
1.1 History & Introduction

- **LaTeX** is a software system for document preparation.
- *Created in the early 1980s by Leslie Lamport.*
- *LaTeX 2e, the current standard version.*
- **Free software.**

1.2 Images



(a) Issac Newton



(b) Nikola Tesla

Figure 1.1: Famous scientists

1.3 Drawing shapes



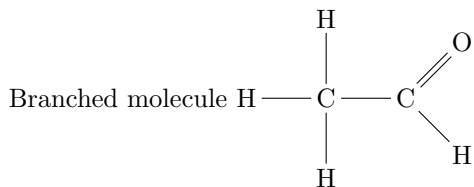
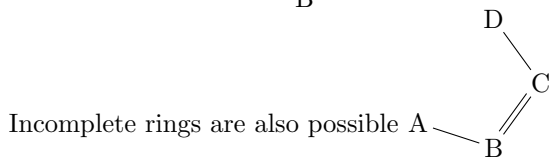
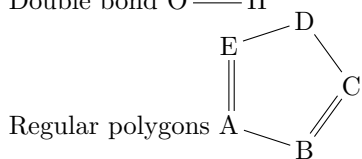
1.4 Tables

Table 1.1: Coefficients of Exponential fit -j, Box-3 for Z-Coordinate map

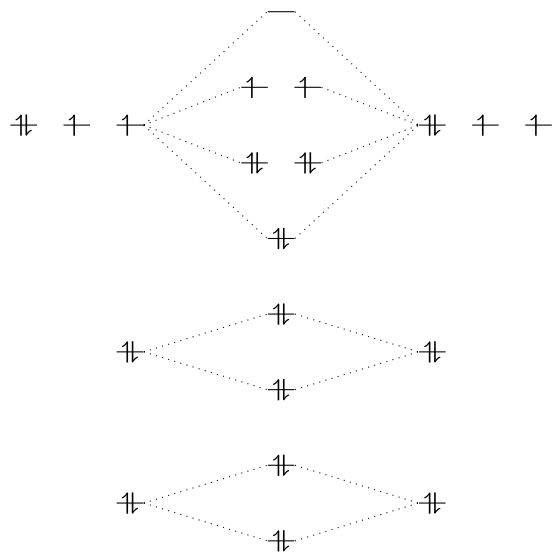
Parameter	Value (95% Confidence)
a	41.28 (36.01, 46.55)
b	-0.1734 (-0.1965, -0.1502)
c	29.08 (27.79, 30.36)
d	-0.01035 (-0.01152, -0.009181)
SSE	1.49
R-square	0.9987
RMSE	0.2096

1.5 Chemical Graphs

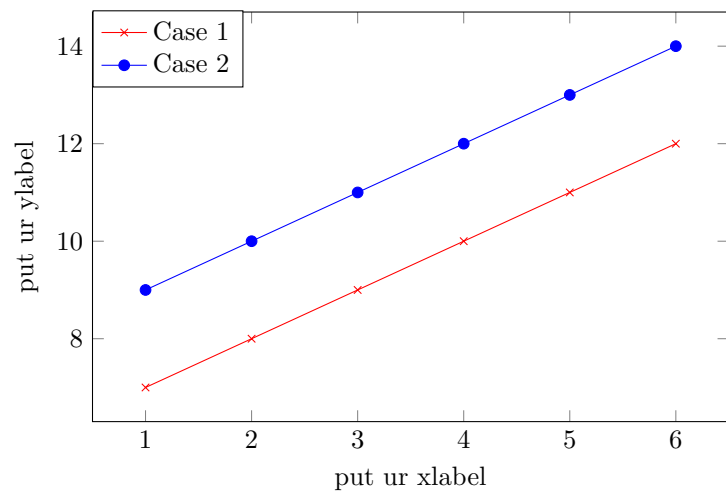
Double bond O=H

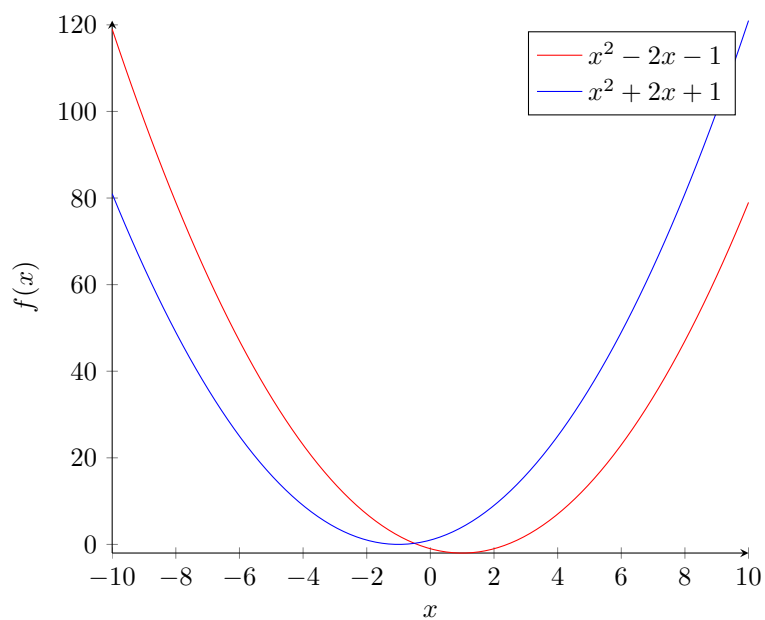


1.6 Molecular Orbitals



1.7 Plotting Graphs





1.8 Math Equations

$$\alpha^2 + \beta^2 = \gamma^2$$

$$\log(xy) = \log x + \log y$$

$$F = G \frac{m_1 m_2}{r^2}$$

$$\phi(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

$$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$$

$$f(w) = \int_{-\infty}^{\infty} f(x) e^{-2\pi i x w} dx$$

$$\nabla \cdot E = \frac{\rho}{\varepsilon_0}$$