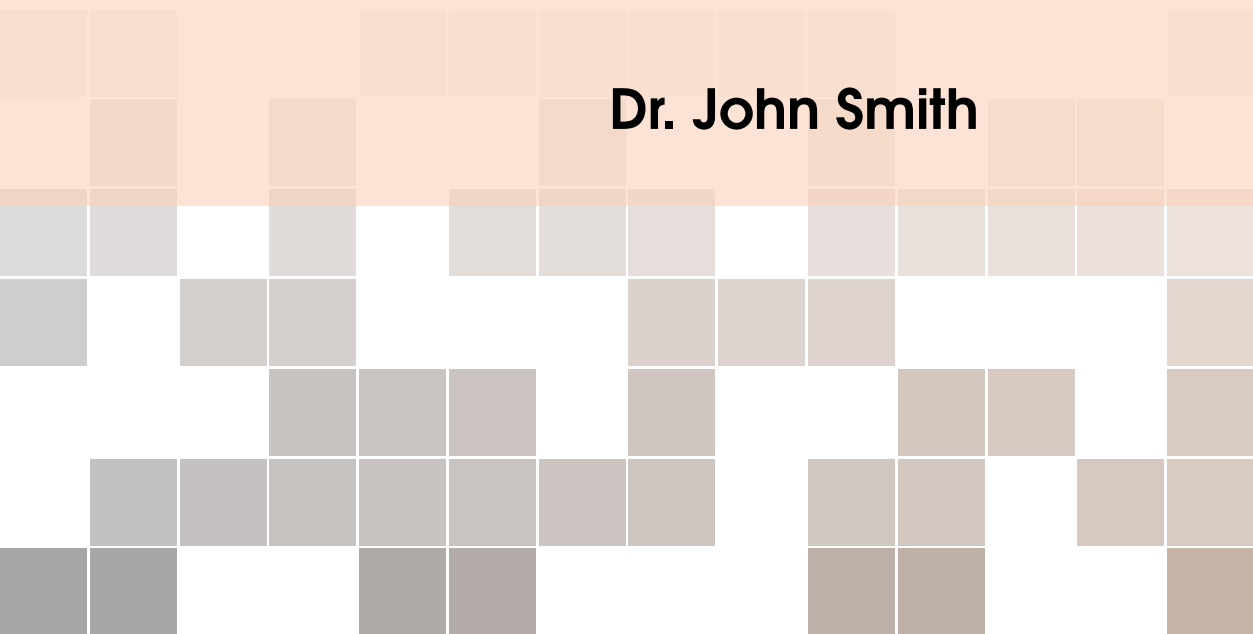


# The Search for a Title

A Profound Subtitle

Dr. John Smith



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*First printing, March 2013*

# Contents

I	Part One	
<b>1</b>	<b>Text Chapter</b> .....	<b>7</b>
1.1	Paragraphs of Text	7
1.2	Citation	8
1.3	Lists	8
1.3.1	Numbered List .....	8
1.3.2	Bullet Points .....	8
1.3.3	Descriptions and Definitions .....	8
<b>2</b>	<b>In-text Elements</b> .....	<b>9</b>
2.1	Theorems	9
2.1.1	Several equations .....	9
2.1.2	Single Line .....	9
2.2	Definitions	9
2.3	Notations	10
2.4	Remarks	10
2.5	Corollaries	10
2.6	Propositions	10
2.6.1	Several equations .....	10
2.6.2	Single Line .....	10
2.7	Examples	10
2.7.1	Equation and Text .....	10
2.7.2	Paragraph of Text .....	11

2.8	Exercises	11
2.9	Problems	11
2.10	Vocabulary	11

II	Part Two
----	----------

3	Presenting Information .....	15
3.1	Table	15
3.2	Figure	15
3.3	Example of Link To Section	16
	Bibliography .....	17
	Index .....	19



# Part One

<b>1</b>	<b>Text Chapter .....</b>	<b>7</b>
1.1	Paragraphs of Text	
1.2	Citation	
1.3	Lists	
<b>2</b>	<b>In-text Elements .....</b>	<b>9</b>
2.1	Theorems	
2.2	Definitions	
2.3	Notations	
2.4	Remarks	
2.5	Corollaries	
2.6	Propositions	
2.7	Examples	
2.8	Exercises	
2.9	Problems	
2.10	Vocabulary	





# 1. Text Chapter

## 1.1 Paragraphs of Text

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## 1.2 Citation

This statement requires citation ([John Smith 2012](#)); this one is more specific ([James Smith 2013](#)). Direct citations John Smith ([2012](#)) and James Smith ([2013](#)).

## 1.3 Lists

Lists are useful to present information in a concise and/or ordered way<sup>1</sup>.

### 1.3.1 Numbered List

On  $\LaTeX$  this is `\begin{enumerate}`:

1. The first item
2. The second item
3. The third item

### 1.3.2 Bullet Points

On  $\LaTeX$  this is `\begin{itemize}`:

- The first item
- The second item
- The third item

### 1.3.3 Descriptions and Definitions

On  $\LaTeX$  this is `\begin{description}`:

**Name** Description

**Word** Definition

**Comment** Elaboration

---

<sup>1</sup>Footnote example...



## 2. In-text Elements

### 2.1 Theorems

This is an example of theorems.

#### 2.1.1 Several equations

This is a theorem consisting of several equations.

**Theorem 2.1.1 — Name of the theorem.** In  $E = \mathbb{R}^n$  all norms are equivalent. It has the properties:

$$||\mathbf{x}|| - ||\mathbf{y}|| \leq ||\mathbf{x} - \mathbf{y}|| \quad (2.1)$$

$$||\sum_{i=1}^n \mathbf{x}_i|| \leq \sum_{i=1}^n ||\mathbf{x}_i|| \quad \text{where } n \text{ is a finite integer} \quad (2.2)$$

#### 2.1.2 Single Line

This is a theorem consisting of just one line.

**Theorem 2.1.2** A set  $\mathcal{D}(G)$  is dense in  $L^2(G)$ ,  $|\cdot|_0$ .

### 2.2 Definitions

This is an example of a definition. A definition could be mathematical or it could define a concept.

**Definition 2.2.1 — Definition name.** Given a vector space  $E$ , a norm on  $E$  is an application, denoted  $||\cdot||$ ,  $E$  in  $\mathbb{R}^+ = [0, +\infty[$  such that:

$$||\mathbf{x}|| = 0 \Rightarrow \mathbf{x} = \mathbf{0} \quad (2.3)$$

$$||\lambda \mathbf{x}|| = |\lambda| \cdot ||\mathbf{x}|| \quad (2.4)$$

$$||\mathbf{x} + \mathbf{y}|| \leq ||\mathbf{x}|| + ||\mathbf{y}|| \quad (2.5)$$

## 2.3 Notations

**Notation 2.1.** Given an open subset  $G$  of  $\mathbb{R}^n$ , the set of functions  $\varphi$  are:

1. Bounded support  $G$ ;
2. Infinitely differentiable;

a vector space is denoted by  $\mathcal{D}(G)$ .

## 2.4 Remarks

This is an example of a remark.



The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field  $\mathbb{K} = \mathbb{R}$ , however, established properties are easily extended to  $\mathbb{K} = \mathbb{C}$ .

## 2.5 Corollaries

This is an example of a corollary.

**Corollary 2.5.1 — Corollary name.** The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field  $\mathbb{K} = \mathbb{R}$ , however, established properties are easily extended to  $\mathbb{K} = \mathbb{C}$ .

## 2.6 Propositions

This is an example of propositions.

### 2.6.1 Several equations

**Proposition 2.6.1 — Proposition name.** It has the properties:

$$||\mathbf{x}|| - ||\mathbf{y}|| \leq ||\mathbf{x} - \mathbf{y}|| \quad (2.6)$$

$$||\sum_{i=1}^n \mathbf{x}_i|| \leq \sum_{i=1}^n ||\mathbf{x}_i|| \quad \text{where } n \text{ is a finite integer} \quad (2.7)$$

### 2.6.2 Single Line

**Proposition 2.6.2** Let  $f, g \in L^2(G)$ ; if  $\forall \varphi \in \mathcal{D}(G)$ ,  $(f, \varphi)_0 = (g, \varphi)_0$  then  $f = g$ .

## 2.7 Examples

This is an example of examples.

### 2.7.1 Equation and Text

■ **Example 2.1** Let  $G = \{x \in \mathbb{R}^2 : |x| < 3\}$  and denoted by:  $x^0 = (1, 1)$ ; consider the function:

$$f(x) = \begin{cases} e^{|x|} & \text{si } |x - x^0| \leq 1/2 \\ 0 & \text{si } |x - x^0| > 1/2 \end{cases} \quad (2.8)$$

The function  $f$  has bounded support, we can take  $A = \{x \in \mathbb{R}^2 : |x - x^0| \leq 1/2 + \varepsilon\}$  for all  $\varepsilon \in ]0; 5/2 - \sqrt{2}[$ . ■

### 2.7.2 Paragraph of Text

■ **Example 2.2 — Example name.** Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris. ■

## 2.8 Exercises

This is an example of an exercise.

**Exercise 2.1** This is a good place to ask a question to test learning progress or further cement ideas into students' minds. ■

## 2.9 Problems

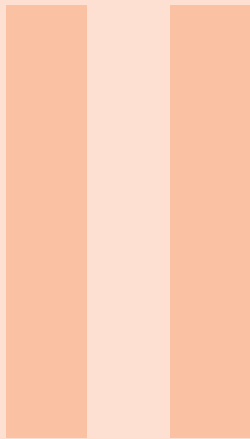
**Problem 2.1** What is the average airspeed velocity of an unladen swallow?

## 2.10 Vocabulary

Define a word to improve a students' vocabulary.

**Vocabulary 2.1 — Word.** Definition of word.





# Part Two

<b>3</b>	<b>Presenting Information</b> .....	<b>15</b>
3.1	Table	
3.2	Figure	
3.3	Example of Link To Section	
	<b>Bibliography</b> .....	<b>17</b>
	<b>Index</b> .....	<b>19</b>



## 3. Presenting Information

### 3.1 Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 3.1: Table caption

### 3.2 Figure



Figure 3.1: Figure caption

Use command `![Test Figure](Pictures/placeholder.jpg){#fig:testfig width=50%}` for figure. See [Figure 3.2](#) below.

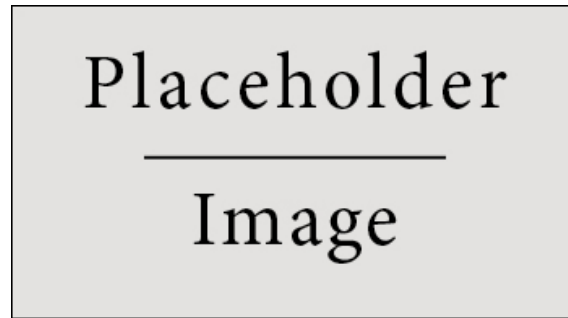


Figure 3.2: Test Figure

### **3.3 Example of Link To Section**

[Link to this subsection](#)





## Bibliography

Smith, James. 2013. "Article Title" 14 (6): 1–8.

Smith, John. 2012. *Book Title*. 1st ed. Vol. 3. 2nd Series. City: Publisher.



## Index

### C

Citation .....	8
Corollaries .....	10

### D

Definitions .....	9
-------------------	---

### E

Examples .....	10
Equation and Text .....	10
Paragraph of Text .....	11
Exercises .....	11

### F

Figure .....	15
--------------	----

### L

Link to Section .....	16
Lists .....	8
Bullet Points .....	8
Descriptions and Definitions .....	8
Numbered List .....	8

### N

Notations .....	10
-----------------	----

### P

Paragraphs of Text .....	7
Problems .....	11
Propositions .....	10
Several Equations .....	10
Single Line .....	10

### R

Remarks .....	10
---------------	----

### T

Table .....	15
Theorems .....	9
Several Equations .....	9
Single Line .....	9

### V

Vocabulary .....	11
------------------	----