

# Contents

<b>Foreword</b>	<b>v</b>
<b>Introduction</b>	<b>1</b>
 <i>PART 1</i>	
<b>CHAPTER 1</b>	
<b>The Coordinates of Points on a Line</b>	<b>5</b>
1. The Number Axis	5
2. The Absolute Value of a Number	8
3. The Distance Between Two Points	9
 <b>CHAPTER 2</b>	
<b>The Coordinates of Points in the Plane</b>	<b>12</b>
4. The Coordinate Plane	12
5. Relations Connecting Coordinates	15
6. The Distance Between Two Points	17
7. Defining Figures	20
8. We Begin to Solve Problems	23
9. Other Systems of Coordinates	27
 <b>CHAPTER 3</b>	
<b>The Coordinates of a Point in Space</b>	<b>32</b>
10. Coordinate Axes and Planes	32
11. Defining Figures in Space	36

## *PART 2*

### CHAPTER 1

<b>Introduction</b>	<b>41</b>
1. Some General Considerations	41
2. Geometry as an Aid in Calculation	42
3. The Need for Introducing Four-Dimensional Space	45
4. The Peculiarities of Four-Dimensional Space	47
5. Some Physics	48

### CHAPTER 2

<b>Four-Dimensional Space</b>	<b>50</b>
6. Coordinate Axes and Planes	51
7. Some Problems	56

### CHAPTER 3

<b>The Four-Dimensional Cube</b>	<b>58</b>
8. The Definition of the Sphere and the Cube	58
9. The Structure of the Four-Dimensional Cube	60
10. Problems on the Cube	67