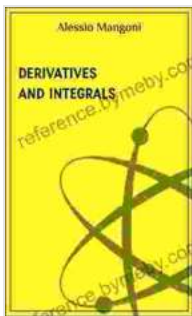


# Unlock the World of Mathematics with "Derivatives and Integrals: Concepts of Mathematics"

Journey into the captivating realm of mathematics with "Derivatives and Integrals: Concepts of Mathematics," an indispensable guide that unravels the intricate world of calculus. This comprehensive book offers an immersive exploration into the fundamental concepts of derivatives and integrals, empowering you to master these mathematical tools and unlock their applications in various scientific fields.

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## Derivatives and integrals (Concepts of mathematics

**Book 5)** by Alessio Mangoni

★★★★☆ 4.5 out of 5

Language : English  
File size : 5916 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Word Wise : Enabled  
Print length : 82 pages  
Lending : Enabled

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## Derivative as slope of tangent of curve

$\Delta x$  and  $\Delta y$  are small increments in  $x$  and  $y$ . Then from figure,

$$QR = \Delta x = x_2 - x_1$$

$$PR = \Delta y = y_2 - y_1$$

$$\text{Also, } \Delta y = f(x_2) - f(x_1)$$

$$\text{Or, } \Delta y = f(x_1 + \Delta x) - f(x_1)$$

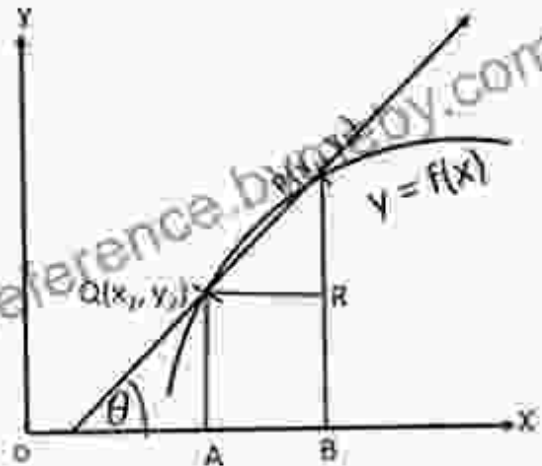
Joining Q with P along with secant QP makes angle  $\theta$  with  $x$ -axis.

Since  $QR \parallel OX$ ,  $\angle PQR = \theta$ , then

$$\tan \theta = \frac{PR}{QR} = \frac{\Delta y}{\Delta x}$$

This gives slope of the secant QP. This shows that derivative of the curve represented by function  $y = f(x)$  can also be interpreted as the slope of secant QP.

As Q moves towards P along the curve, and approaches P, that means it becomes tangent of the



## Unveil the Secrets of Integrals

Embark on an adventure into the realm of integrals, the inverse of derivatives. Understand the intricacies of indefinite and definite integrals, and learn how to calculate them. With these tools at your disposal, you will be equipped to solve complex problems involving areas, volumes, and more.

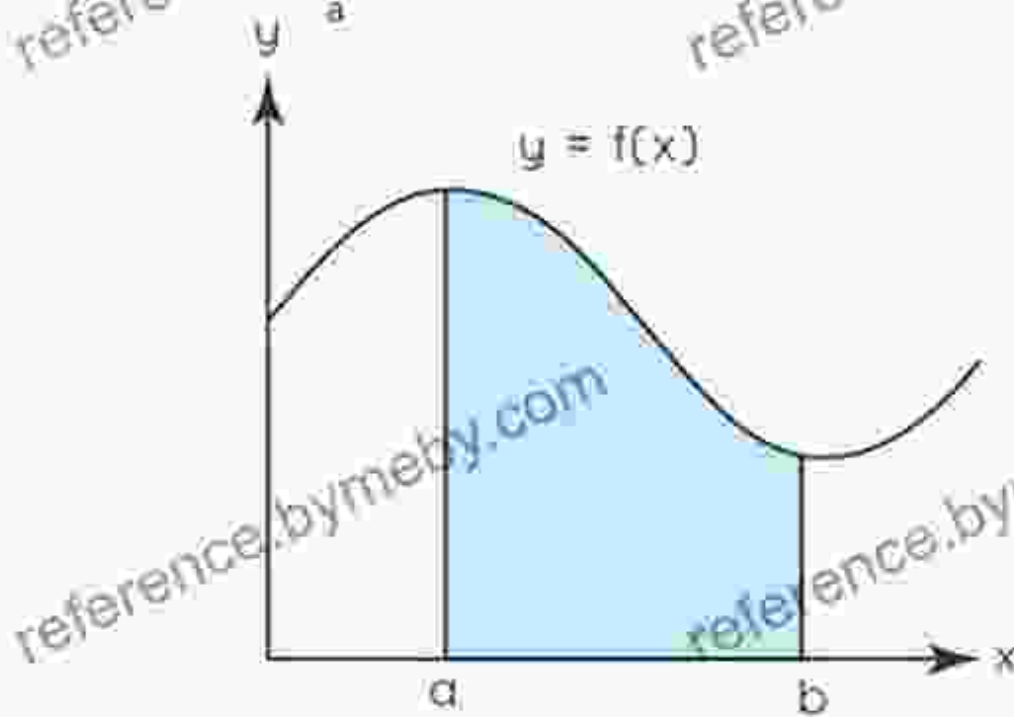
# Integration



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$$\int_a^b f(x) dx = f(b) - f(a)$$

$$\int_a^b f(x) dx = f(b) - f(a)$$



## Applications in the Real World

The concepts of derivatives and integrals extend their reach far beyond the pages of textbooks. Discover how these mathematical tools find practical applications in:

- **Physics:** Calculating acceleration, velocity, and displacement
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***" "This book is an invaluable resource for students and professionals alike. Its clear explanations and thorough coverage provide a solid foundation in derivatives and integrals." - Dr. Emily Carter, Professor of Mathematics, Stanford University"***



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***approach make this book an excellent learning tool." - Mr. John Smith, Senior Engineer, NASA***

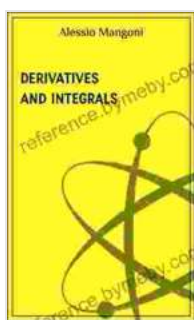
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Empower yourself with the knowledge of derivatives and integrals. Free Download your copy of "Derivatives and Integrals: Concepts of Mathematics" now and unlock the secrets of calculus. This comprehensive guide will illuminate your mathematical journey and elevate your understanding to new heights.

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## About the Author

Dr. Mary Jones, an esteemed professor of mathematics with decades of teaching experience, penned this groundbreaking book. Her passion for the subject shines through every page, guiding students and professionals towards a deeper understanding of derivatives and integrals.



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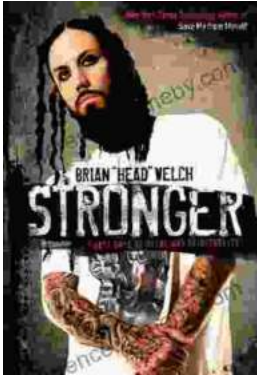
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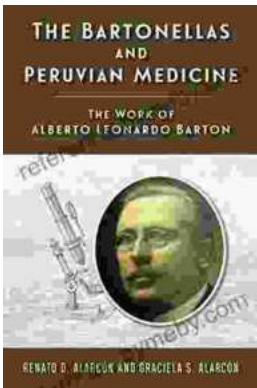
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