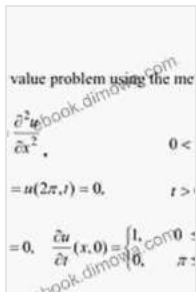


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Multiple Solutions Of Boundary Value Problems: A Variational Approach (Trends In Abstract And Applied Analysis Book 1) by Joseph Polchinski

★★★★☆ 4.7 out of 5

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File size : 778 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 288 pages
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- The role of convexity and subdifferentials
- Optimization problems and the calculus of variations

Exploring Applied Frontiers

Beyond theoretical concepts, this book delves into the practical applications of variational methods in various fields, including:

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Unveiling Cutting-Edge Techniques

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Variational Calculus: Euler's Equation

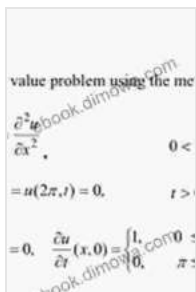
• This function satisfies $\frac{\partial f}{\partial y} - \frac{d}{dx} \left(\frac{\partial f}{\partial y'} \right) = 0$

• Derivatives $\frac{\partial f}{\partial y} = 0$ $\frac{\partial f}{\partial y'} = \frac{2\pi xy'}{\sqrt{1+y'^2}}$

• Substituting $\frac{d}{dx} \frac{2\pi xy'}{\sqrt{1+y'^2}} = 0 \Leftrightarrow \frac{d}{dx} \frac{xy'}{\sqrt{1+y'^2}} = 0$

• Integrating $\frac{xy'}{\sqrt{1+y'^2}} = a \Leftrightarrow x^2 y'^2 = a^2 + y'^2 a^2 \Leftrightarrow y' = \frac{a}{\sqrt{x^2 - a^2}}$

• Integrating again $y = \int \frac{a}{\sqrt{x^2 - a^2}} dx$



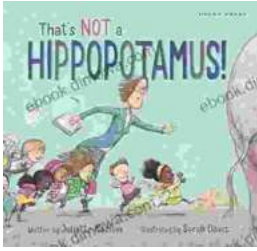
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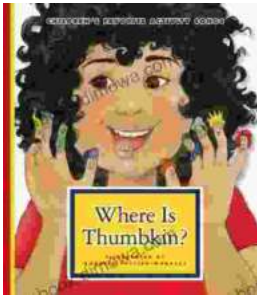
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