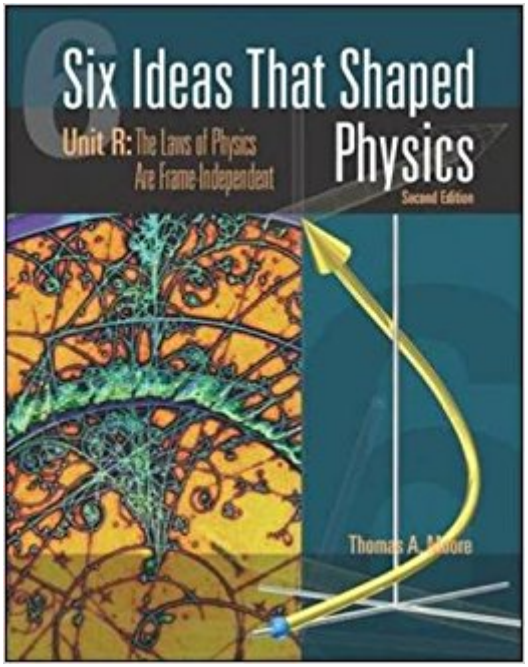
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Six Ideas That Shaped Physics: Unit R - Laws Of Physics Are Frame-Independent



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Synopsis

SIX IDEAS THAT SHAPED PHYSICS is the 21st century's alternative to traditional, encyclopedic textbooks. Thomas Moore designed SIX IDEAS to teach students: --to apply basic physical principles to realistic situations --to solve realistic problems --to resolve contradictions between their preconceptions and the laws of physics --to organize the ideas of physics into an integrated hierarchy

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Customer Reviews

Six Ideas That Shaped Physics Unit R is a one of a kind introductory physics textbook, catering to advanced high school mechanics classes and university-level introductory mechanics. The book itself is thin enough to be manageable, yet examines the experiments leading up to the development of Special Relativity and clearly explains the consequences of the field.The Six Ideas series as a whole provides a far superior introduction to physics than stock college textbooks (such as Halliday & Resnick, etc), but falls short of the great introductory textbooks used by elite schools (Berkeley Physics Course, Kleppner and Kolenkow). This can easily seen due to the insufficient coverage of angular momentum in this unit. Rather than give a thorough treatment of physics, the author seems to have built the book (in combination with Units C and N) to fit a semester-based time schedule which consequently allows for in-depth focus on a few chosen topics. It should be noted that the series as a whole seems to be geared for the MCAT Physics section (six chapters on geometric optics available on the Six Ideas website).The book is written in a conversational tone which mitigates the dullness of technical lecture. In addition, I am particularly fond of the pre-chapter

outline; a tool that informs the reader the general direction of the arguments and proofs before he or she dives in. The few examples provide challenging demonstrations of problem-solving technique; they are not merely plug-and-chug. These combined with the in-chapter mental exercises are perhaps less testing of knowledge (although some are fairly complex), but are more beneficial as much needed breaks between new ideas.I read this book during the summer before my honors introductory physics class (using the same textbook). Before reading this text, Special Relativity was a completely foreign topic. In a handful of chapters, Moore clearly explained the basic consequences of the theory and gave me a thorough grounding in the subject. All in all, Unit R is the best book in the Six Ideas series. However, it should be known that in order to truly understand the intricacies of the Special Relativity, a more in-depth book should be simultaneously studied (I heavily recommend the Feynman Lectures Volume 1). The combination provided me with an introduction to the ideas through Six Ideas, then a restructuring, solidification, and extension of those same ideas in the more advanced Lectures.For self-study, I recommend Six Ideas that Shaped Physics over most other introductory textbooks (provided a more advanced one is simultaneously studied). For those saddled with crude textbooks such as Halliday & Resnick, skip over this to something more challenging to gain a better understanding of physics.

This book was a fine study companion. Had a lot of good practice problems, but the reading material wasn’t exactly in depth enough for the course I was taking.

I mean, I got a B+ in Modern Physics, so I can’t complain.It’s a pretty short book, with a lot of info crammed in. Structure and pacing is really easy to follow, it’s an easy read (insofar as relativity can be), and they give you plenty of examples of the calculations you’re probably going to be doing in class.Even if it’s not for school, I imagine most people could pick this up and learn a lot about high-speed relativistic physics.World-line diagrams were really fantastic, I thought, especially the warped second set of axes. Calibrating the axes though aren’t super fun. If you’re making world-line diagrams, I’d suggest looking up some hyperbolic graph paper, you wouldn’t believe how much easier it makes it.

Well written and has a lot of great examples for those teaching themselves.

Very clearly and succinctly explains the concepts of special relativity. Helpful for those who may find the professor confusing.

Physic is amazing and this book proves it. Brought it for PHYS 344 course at Purdue University. Do not need to go to the class ever since. Pass all exams related to the topice accordingly. The book is not very thick, but well printed and is written in clear and consistent language. Bravo!

This book was required for a physics course I was taking in college. The text can be a bit verbose at times but overall the material is not too hard to understand for anyone who has a basic background in physics.

It was a text book I was required to get some years ago, so I'm sure it did its job. As to why the instructor wanted us to get so many books... dunno, but it's kind of stupid in my opinion.

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