Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics)

Brian C. Hall

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics)

Brian C. Hall

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) Brian C. Hall

This textbook treats Lie groups, Lie algebras and their representations in an elementary but fully rigorous fashion requiring minimal prerequisites. In particular, the theory of matrix Lie groups and their Lie algebras is developed using only linear algebra, and more motivation and intuition for proofs is provided than in most classic texts on the subject.

In addition to its accessible treatment of the basic theory of Lie groups and Lie algebras, the book is also noteworthy for including:

- a treatment of the Baker–Campbell–Hausdorff formula and its use in place of the Frobenius theorem to establish deeper results about the relationship between Lie groups and Lie algebras
- motivation for the machinery of roots, weights and the Weyl group via a concrete and detailed exposition of the representation theory of sl(3;$\mathbf{C}$)
- an unconventional definition of semisimplicity that allows for a rapid development of the structure theory of semisimple Lie algebras
- a self-contained construction of the representations of compact groups, independent of Lie-algebraic arguments

The second edition of *Lie Groups, Lie Algebras, and Representations* contains many substantial improvements and additions, among them: an entirely new part devoted to the structure and representation theory of compact Lie groups; a complete derivation of the main properties of root systems; the construction of finite-dimensional representations of semisimple Lie algebras has been elaborated; a treatment of universal enveloping algebras, including a proof of the Poincaré–Birkhoff–Witt theorem and the existence of Verma modules; complete proofs of the Weyl character formula, the Weyl dimension formula and the Kostant multiplicity formula.

Review of the first edition:

This is an excellent book. It deserves to, and undoubtedly will, become the standard text for early graduate courses in Lie group theory ... an important addition to the textbook literature ... it is highly recommended.

— The Mathematical Gazette

[⬇ **Download** Lie Groups, Lie Algebras, and Representations: An ...pdf](#)

[▤ **Read Online** Lie Groups, Lie Algebras, and Representations: A ...pdf](#)

Download and Read Free Online Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) Brian C. Hall

---

From reader reviews:

Lorenzo Davis:

Do you have favorite book? When you have, what is your favorite's book? Book is very important thing for us to be aware of everything in the world. Each book has different aim or perhaps goal; it means that e-book has different type. Some people feel enjoy to spend their time for you to read a book. These are reading whatever they take because their hobby is actually reading a book. Think about the person who don't like reading through a book? Sometime, particular person feel need book whenever they found difficult problem or perhaps exercise. Well, probably you will want this Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics).

Tenesha Little:

The book Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) will bring that you the new experience of reading a book. The author style to clarify the idea is very unique. Should you try to find new book to learn, this book very suitable to you. The book Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) is much recommended to you to read. You can also get the e-book in the official web site, so you can easier to read the book.

Jennifer Wadsworth:

This Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) is great e-book for you because the content that is full of information for you who always deal with world and have to make decision every minute. That book reveal it info accurately using great manage word or we can point out no rambling sentences included. So if you are read the idea hurriedly you can have whole details in it. Doesn't mean it only gives you straight forward sentences but tough core information with lovely delivering sentences. Having Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) in your hand like finding the world in your arm, facts in it is not ridiculous one particular. We can say that no e-book that offer you world throughout ten or fifteen second right but this e-book already do that. So , this is certainly good reading book. Hi Mr. and Mrs. hectic do you still doubt that?

Robert Dougherty:

Beside this Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) in your phone, it could possibly give you a way to get nearer to the new knowledge or facts. The information and the knowledge you may got here is fresh through the oven so don't always be worry if you feel like an older people live in narrow small town. It is good thing to have Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) because this book offers to your account readable information. Do you sometimes have book but you do not get what it's facts

concerning. Oh come on, that will not happen if you have this in the hand. The Enjoyable blend here cannot be questionable, similar to treasuring beautiful island. So do you still want to miss the item? Find this book and also read it from right now!

Download and Read Online Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) Brian C. Hall #ZF8L7XA0KTU

Read Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall for online ebook

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall books to read online.

Online Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall ebook PDF download

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall Doc

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall Mobipocket

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) by Brian C. Hall EPub