Introduction to Linear Algebra, by Gilbert Strang, 2nd ed., Wellesley-Cambridge Press, Cambridge MA, 1998. xviii + 502pp. ISBN: 09614088 5 5.

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In both of my reviews of Strang's books on linear algebra [Cargal 1989, 1994] I have stated my contention, held firmly for more than fifteen years, that Strang's *Linear Algebra and Its Applications* is the most important book around on undergraduate linear algebra. The third edition [1988] being the edition that I reviewed, essentially corrected any serious flaws in the earlier editions and is a book that everyone should have. Let me mention also, that I alluded earlier, without mentioning names, that this high regard was shared by the eminent scholar R. P. Boas Jr.

In 1994, when Strang published the first edition of the book under review, I gave it a rather extended review here [Cargal 1994]. Later I used it in the classroom. Wellesley-Cambridge press is Strang's press; he has complete control over his books. Whereas *Linear Algebra and Its Applications* is *the* undergraduate book on linear algebra, *Introduction to Linear Algebra* was written as a textbook for the usual sophomore level course.

This second edition was rewritten based on feedback from instructors. For example, some of the geometrical material integral to the first chapter has been moved back several chapters or to the exercises. The overall structure of the book has not changed, so my earlier review applies with the caveat that the book is now somewhat better.

Speaking as a reviews editor who has studied dozens of texts in linear algebra, I believe that linear algebra is the discipline with the greatest population of excellent texts. For competent or superior texts, I think it out distances calculus (easily), differential equations (again easily), or any other discipline of mathematics. A rough guess would be that there are now in print at least 30 undergraduate texts on linear algebra (a few fairly advanced) that are quite good. If forced, say at gun point, to choose one over the others for a first course in linear algebra, I would go with either Strang's *Introduction to Linear Algebra*, 2nd ed., or the book by Lay [1997] (reviewed with the other Linear Algebra books in Epperson [1998]).

References

Cargal, James M. 1989. Review of *Linear Algebra and its Applications*, 3rd ed., by Gilbert

Strang. *The UMAP Journal* 10 (3): 275-276.

———————. 1994. Review of *Introduction to Linear Algebra* by Gilbert Strang. *The UMAP Journal* 15 (2): 181-184.

Epperson, James F. 1998. Review of David C. Lay's *Linear Algebra and Its Applications* and other books. *The UMAP Journal* 19 (2): 182-184.

Lay, David C. 1997. *Linear Algebra and Its Applications*, 2nd ed. Reading, MA: Addison-Wesley.

Strang, Gilbert. 1988. *Linear Algebra and Its Applications*, 3rd ed. New York: Harcourt, Brace, Jovanovich.

James M. Cargal, Mathematics Dept., Troy State University Montgomery, P.O. Drawer 4419, Montgomery, AL 36103; `JMCargal@sprintmail.com`.