good student will notice that $A - \mu_k I$ is nearly singular and wonder if that causes the Rayleigh quotient iteration to be unstable. Stewart [3] explains why this is not a problem.

The Rayleigh quotient iteration is a simple algorithm which rapidly estimates eigenvalues. The accuracy can even be guaranteed! There are easy algorithms for finding eigenvalues.

REFERENCES

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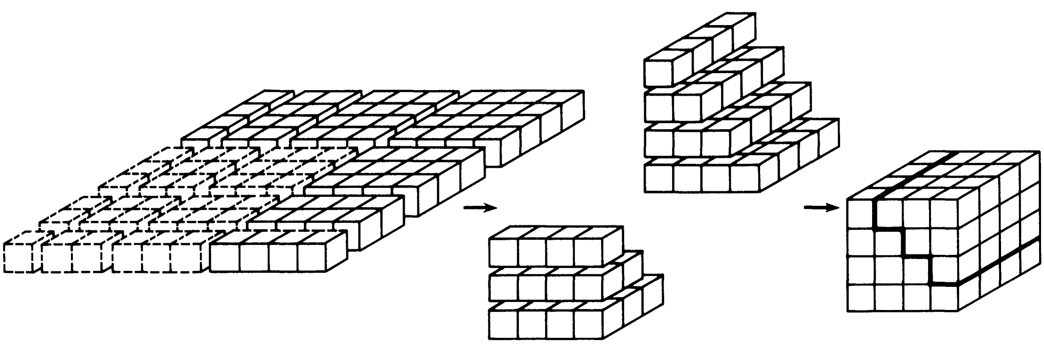
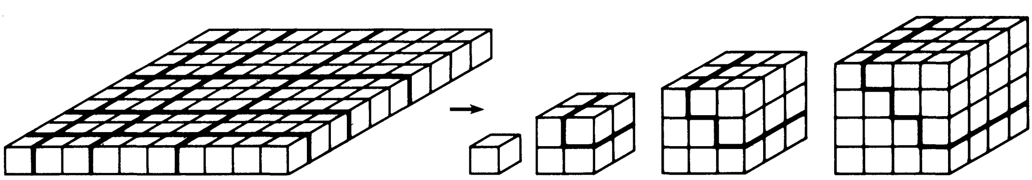
3. G. W. Stewart, *Introduction to Matrix Computations*, Academic Press, New York, 1973.
4. Gilbert Strang, *Linear Algebra and Its Applications*, 2nd edition, Academic Press, New York, 1976.
5. Gareth Williams and Donna Williams, The power method for finding eigenvalues on a microcomputer, *Amer. Math. Monthly* 93 (1986), 562–565.

Proof without Words: Squares of Triangular Numbers



$$t_n = 1 + 2 + \cdots + n \Rightarrow t_n^2 - t_{n-1}^2 = n^3.$$



$$t_n^2 = (1 + 2 + \cdots + n)^2 = 1^3 + 2^3 + \cdots + n^3.$$

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