

## Integration of the Quadratic Function and Generalization

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Kunio Mitsuma was born in Tokyo, Japan. After finishing college as a mathematics major, he moved to the U.S. for his Master's (West Virginia University) and Ph.D. (Penn State) in mathematics. He is currently on the mathematics faculty at Kutztown University of Pennsylvania.

### Abstract

We will first recall useful formulas in integration that simplify the calculation of certain definite integrals with the quadratic function. A main formula relies only on the coefficients of the function. We will then explore a geometric proof of one of these formulas. Finally, we will extend the formulas to more general cases.