

# Bunyakovsky Viktor Yakovlevich I

## Encyclopedia.com

Complete Dictionary of Scientific Biography COPYRIGHT 2008 Charles Scribner's Sons  
5-6 minutes

---

(b. Bar, Podolskaya gÜbernia [now Vinnitsa oblast], Russia, 16 December 1804; d. St. Petersburg, Russia, 12 December 1889)

*mathematics, mechanics.*

Bunyakovsky was the son of Colonel Yakov Vasilievich Bunyakovsky. After a basic education at home, he completed his studies abroad, receiving the doctorate in mathematical sciences at Paris in 1825. He returned the following year to [St. Petersburg](#), where he subsequently began his scientific research and teaching. For many years Bunyakovsky lectured on mathematics and mechanics at the First Cadet Corps (later the Naval Academy) and at the Communications Institute. From 1846 to 1880 he was a professor at [St. Petersburg University](#).

Bunyakovsky's scientific work was done at the St. Petersburg Academy of Sciences, of which he was named adjunct in mathematics (1828), extraordinary academician (1830), and ordinary academician (1841). He was elected vice-president in 1864 and retained the post for twenty-five years.

Of Bunyakovsky's approximately 150 published works in mathematics and mechanics, a monograph on inequalities relating to integrals in finite intervals (1859) is particularly well known. In this work he first stated the important integral inequality named for him:

Rediscovered and published by Hermann Schwarz in 1884, it is now often known as the Schwarz inequality. Bunyakovsky produced many works on [number theory](#) and in particular solved a series of specific equations and gave a new proof for the law of quadratic reciprocity.

Some of Bunyakovsky's results were included in P. Bachmann's *Niedere Zahlentheorie*, and about forty references to his original results appear in L.E. Dickson's *History of the Theory of Numbers*. His contributions to [number theory](#) include a work (1846) in which he gave an original exposition of this science and of its application to insurance and demography.

Bunyakovsky's works also deal with geometry. In 1853 he critically examined previous attempts to prove Euclid's fifth postulate concerning parallel lines and attempted a proof himself-unaware of the significance of Lobachevsky's [non-Euclidean geometry](#). Active in disseminating mathematical knowledge in Russia, he also contributed substantially to the enrichment of Russian mathematical terminology.

Bunyakovsky's works on applied mechanics and hydrostatics are also of interest. To commemorate fifty years of his research and teaching, the St. Petersburg Academy in 1875 issued a medal and established a prize bearing his name for outstanding work in mathematics.

## BIBLIOGRAPHY

I. Original Works Bunyakovsky's major writings are "Du mouvement dans la machine d' Atwood. en ayant égard à l'élasticité du fil," in *Mémoires de l'Académie impériale des sciences de St.Pétersbourg*, 6th ser., **2** (1833), 179–186; *Leksikon chistoy i prikladnoy matematiki* ("Lexicon of pure and Applied Mathematics" St. Petersburg, 1837); *Osnovania matematicheskoy teorii veroyatnostey* ("Foundations of the Mathematical Theory of Probability"; St. Petersburg, 1846); "Note sur le maximum du nombre des positions d'équilibre d'un prisme triangulaire homogène plongé dans un fluide." in *Bulletin de la classe physico-mathématique de l'Académie impériale des sciences de St-Pétersbourg*, **10**, no. 4 (1852), 49–58; *Parallelnye linii* ("Parallel Lines"; St Petersburg, 1853); *O nekotorykh neravenstvakh, odnosyashchikhsya k opredelennym integralam ili integralam v konechnykh raznostyakh* ("On Certain Inequalities Relating to Definite Integrals or Integrals in Finite Intervals"; St. Petersburg, 1859); "Sur les planimètres libres," in *Bulletin de l'Académie des sciences de St.-Pétersbourg*, 3rd ser., **11** (1860), 567–573; and *O samoschetakh i o novum ikh primenenii* ("On Computing Machines and New Uses for Them"; St. Petersburg, 1876).

II. Secondary Literature. See K. A. Andreev, *V. Y. Bunyakovsky* (Kharkov, 1890); L. E. Dickson, *History of the Theory of Numbers*, 3 vols. (Washington, DC., 1919–1923). see index; I. G. Melnikov, "O rabo-takh V. Y. Bunyakovskogo po teorii chisel" ("Bunya-kovsky's Works on Number Theory"), in *Trudy Insituta istorii estestvoznaniya i tekhniki. Akademiya nauk*

SSSR. 17(1957), 270–286; *Opisanie prazdnovania doktorskogo yubileya vitse-prezidenta Akademii nauk akademika V. Y. Bunyakovskogo 19 maya 1875 g* (“Description of the Celebration of the Doctoral Jubilee of the Vice-President of the Academy of Sciences, Academician Bunyakovsky. 19 May 1875”; St. Petersburg, 1876); V. E. Prudnikov. *V Y. Bunyakovsky, ucheny ipedagog* (“... Scientist and Teacher”; Moscow, 1954); and A. P. Youshkevitch. *Istoria matematiki v Rossii do 1917 goda* (“History of Mathematics in Russia Before 1917”; Moscow, 1968), esp. 296–302.

A. T. Grigorian