

# Ode To Mathematics

## Introduction

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(1905 - 1986)

**Majestic**

Piano *f* Hns., Tpts. Stgs.

**Slightly faster**

*stacc.* *poco marc.*

First system of a musical score, featuring a grand staff with treble and bass clefs. The music consists of chords and single notes, with a fermata over a chord in the treble staff.

Second system of a musical score, featuring a grand staff with treble and bass clefs. The music consists of chords and single notes.

**Tempo primo**  
Tpts., W.W.  
Hrms.  
*f* Stgs.

Third system of a musical score, featuring a grand staff with treble and bass clefs. It includes dynamic markings *f* and *Stgs.* and instrument abbreviations Tpts., W.W., and Hrms.

**Poco maestoso**

Fourth system of a musical score, featuring a grand staff with treble and bass clefs. It includes the tempo marking **Poco maestoso** and various musical notations such as slurs and ties.

*molto rinforz.*

Fifth system of a musical score, featuring a grand staff with treble and bass clefs. It includes the dynamic marking *molto rinforz.* and *ff*, and various musical notations such as slurs and ties.

**Largo**

**NARRATOR:** "Bertrand Russell tells as that mathematics, rightly viewed,

possesses... .. supreme beauty - a beauty cold and austere,

like that of sculpture, without appeal to any part of our weaker nature, without the georgeous trappings of painting or music, yet sublimely pure, and capable of stern

perfection such as only the greatest art can show. The true spirit of delight, the exhaltation, the sense of being more than man, which is the touchstone of the highest excellence, is to be found in mathematics as surely as in poetry."

**Allegro comodo**

Musical notation for the first system, featuring a treble and bass clef with a forte (*ff*) dynamic marking.

**NARRATOR:** "Conic sections like parabolas, ellipses, hyperboles -

these beautiful words were first the unprofitable amusement of a speculative brain!"

Musical notation for the second system, including dynamics like *sim.* and *leggiero*.

Musical notation for the third system, showing a change in tempo and dynamics.

Musical notation for the fourth system, featuring a steady rhythmic pattern.

Musical notation for the fifth system, including dynamics like *dim. in tempo* and *ppp*, and an *8va* marking.

"Mathematics is mastery over Nature, the spirit of rationalism.

**Maestoso**

pp

The first system of music is in G major, common time, and marked *Maestoso* and *pp*. It features a piano introduction with a steady, rhythmic accompaniment in the bass and a melodic line in the treble.

The second system continues the piano introduction with similar rhythmic patterns and melodic development.

Or in the words of Lord Kelvin: 'Do not imagine that mathematics is hard and crabbed and repulsive to common sense. It is merely the etherealization of common sense.' "

**Slowly** ♩ = 92

*mf* *pp* *molto espress.*

The third system is marked *Slowly* with a tempo of ♩ = 92. It begins with a *mf* dynamic and a *pp* dynamic, followed by a *molto espress.* section.

*poco affrettando*

The fourth system concludes the piece with a *poco affrettando* marking, indicating a slight increase in tempo.

**A tempo primo**

*cresc.* *ff* *dim.*

Bass, Tuba

*pp*

8va

"Primitive civilization gave us addition, subtraction, multiplication and division. Egyptians and Babylonians gave us culture and mathematics.

**Andante**

*pp*  
Hns.

Knowledge of mathematics and science mean power for mankind.

Deduction: All poets are intelligent  
 No intelligent person derides mathematics  
 No poet derides mathematics"

"Induction is part of experimental science in that repeated experiments lead to scientific conclusions.

**Lento**

The musical score is written for piano in 6/8 time, marked **Lento**. It consists of three systems of two staves each. The first system begins with a piano (*p*) dynamic. The second system features a prominent sixteenth-note arpeggiated pattern in the right hand. The third system concludes with a pianissimo (*pp*) dynamic. The key signature has one flat (B-flat), and the time signature is 6/8.

The Greeks developed arithmetica, theory of numbers, and logistica, computation.

Plato said: 'geometry will draw the soul towards truth, and create the spirit of philosophy; arithmetic has a very great and elevating effect, compelling the soul to reason about abstract numbers, and rebelling against the introduction of visible or tangible objects into the argument.'

He also told 'the principal men of our State to go and learn arithmetic, not as amateurs, but they must carry on the study until they see the nature of numbers with the mind only.' "

Lento

pp

dim.

lunga



**Lento**

*p*

"The great Euclid told us that it shall

*dolce*

be possible to draw a straight line joining

*rit.* *breve*

any two points, that it shall be possible to draw

**A tempo**

*A tempo*

a circle with given center and through a