

The study of mathematics is wrongly divorced from the practice of speaking and writing good English. For the essence of good mathematics, like good language, is first to know what to say, and then be able to frame words which express exactly that and nothing else.

E. Cunningham, *Eureka* No.5 (1941) p. 9

The recently published exchange of views on the issue : “The Ph.D. Thesis” omits the insistence on the most sharply distinctive aspect of mathematics, the single respect in which it is, perhaps, like no other discipline on earth: its practitioners must accept differences as to whether a particular mathematical result was worth proving - but they cannot tolerate differences as to whether it was indeed proved.

Leo Zippin

I never got a pass mark in math. The funny thing is I seem to latch on to mathematical theories without realizing what is happening. No indeed, I was a pretty poor pupil at school. And just imagine - mathematicians now use my prints to illustrate their books. Fancy me consorting with these learned folk, as though I were their long-lost brother. I guess they are quite unaware of the fact that I’m ignorant about the whole thing.

M. C. Esher

It is a tribute to the genius of Galois that he recognized that those subgroups for which the left and right cosets coincide are distinguished ones. Very often in mathematics the crucial problem is to recognize and to discover what are the relevant concepts: once this is accomplished the job may be more than half done.

I. N. Herstein, *Topics in Algebra*

A mathematician, like a painter or a poet, is a maker of patterns. If his patterns are more permanent than theirs, it is because they are made with ideas. . . .The mathematician’s patterns, like the painter’s and poet’s, must be beautiful: the ideas, like colours or the words, must fit together in a harmonious way. Beauty is the first test: there is no permanent place in the world for ugly mathematics.

G. H. Hardy

It is true that Fourier has the opinion that the principal object of mathematics is the public utility and the explanation of natural phenomena; but a scientist like him ought to know that the unique object of science is the honor of the human spirit and on this basis a question of the theory of numbers is worth as much as a question about the planetary system.

C. J. Jacobi

Solving a problem is similar to building a house. We must collect the right material, but collecting the material is not enough; a heap of stones is not yet a house. To construct the house or the solution, we must put together the parts and organize them into a purposeful whole.

George Polya

Mathematicians do not study objects, but relations among objects; they are indifferent to the replacement of objects by others as long as relations do not change. Matter is not important, only form interests them.

Henri Poincaré

Banach once told me, “Good mathematicians see analogies between theorems and theories, the very best ones see analogies between analogies.”

S. M. Ulam, *Adventures of a Mathematician*

It is a test of true theories not only to account for but also to predict phenomena.

William Whewell, *Philosophy of Inductive Science*

It is a great nuisance that knowledge can only be acquired by hard work.

W. Somerset Maugham

To see what is general in what is particular and what is permanent in what is transitory is the aim of scientific thought.

Alfred North Whitehead

If but the will be firmly bent, no stuff resists the mind’s intent.

Oliver St. John Gogarty, *The Image Maker*