

MATHEMATICS by Morris Kline

The following passage is from Morris Kline's *Mathematics: The Loss of Certainty* (Oxford University Press, 1980), ISBN 0-19-503085-0, page 352.

Mathematics has much to offer. It is man's supreme intellectual achievement and the most original creation of the human spirit. Music may rouse or pacify the soul, painting may delight the eye, poetry may stir the emotions, philosophy may satisfy the mind, and engineering may improve the material life of man. But mathematics offers all these values. Moreover, in the direction of what reasoning can accomplish, mathematicians have exercised the greatest care that the human mind is capable of to secure the soundness of their results. It is not accidental that mathematical precision is a byword. Mathematics is still the paradigm of the best knowledge available.

The accomplishments of mathematics are the accomplishment of the human mind, and this evidence of what human beings can achieve has given man the courage and confidence to tackle the once seemingly impenetrable mysteries of the cosmos, to overcome fatal diseases to which man is subject, and to question and to improve the political systems under which man lives. In these endeavors mathematics may or may not be effective but our unquenchable hope for success derives from mathematics.

The values are there, values at least as great as any human creation can offer. If all are not readily or widely perceptible or appreciated, fortunately they are utilized. If the climb to reach them is more arduous than in music, say, the rewards are richer, for they include almost all the intellectual, aesthetic, and emotional values that any human creation can offer. To ascend a high mountain may be more strenuous than to climb a low hill but the view from the top extends to far more distant horizons. Values there are in abundance and the only question one may raise is the order of importance. But this question each must answer for himself; individual judgments, opinions, and tastes enter.

Insofar as certainty of knowledge is concerned, mathematics serves as an ideal, an ideal toward which we shall strive, even though it may be one that we shall never attain. Certainty may be no more than a phantom constantly pursued and interminable elusive. However, ideals do have a force and a value. Justice, democracy, and God are ideals. It is true that people have murdered in the name of God and miscarriages of justice are notorious. Nevertheless, these ideals are the major products of thousands of years of civilization. So is mathematics, even if it is only an ideal. Perhaps contemplation of the ideal will make us more aware of the direction we must pursue to obtain truth in any field.