The S-L Theorem

I have read with much interest the March issue of Mathematical Medley, especially the article on the Steiner-Lehmus Theorem, because:

(1) I worked out an indirect proof on much the same lines as the one you have printed as a school-boy in the early 1930's.

(2) I published a direct proof which appeared in the Mathematical Gazette, no. 391 Feb. 1971, p. 58.

(3) The S-L Theorem is definitely worth proving, as this consideration shows: Let the bisectors of angles B and C meet the circumcircle of the triangle *ABC* at *P, Q* respectively. Then clearly *AB = AC* implies *BP = CQ*; but *BP = CQ* does not necessarily imply *AB = AC*. I leave it to the reader to have the fun of determining what is the alternative condition satisfied by *ABC* in this case.

I hope you will find these comments of interest.

A. Robert Pargeter
Devon, England

P. S. "Got you!" – it is a pity that you printed the answer to Q(e) but not the question itself! Was it a variation on a riddle I have known well for many years – Can you make one word out of the letter NEW DOOR?

Editor's note:
A copy of (1) and (2) have been received. A few other readers have also pointed out the omission of Q(e) in "Got you!". We apologise for the omission, and of course, Mr Pargeter has guessed the correct question.

Letters to the

Editor

What is Mathematics?

This new presentation of the Mathematical Medley (Vol 22 No 2, Mar 95) is definitely a refreshing change. The attractive cover listing briefly the highlights present in the issue appeals almost instantly to one's curiosity and generates interest. The short background history of the contributors lends a personal touch to the entire publication. I do indeed look forward to receiving the next issue!

There is a comment I like to make with reference to the article, 'What is Mathematics?' by Dr Peter Pang. In the last paragraph on page 16 of the issue, he wrote this:

"We benefit from mathematics because it trains our minds. It is unlike history and geography, where we learn mostly factual information."

Although it may be his personal reflection, these two statements in juxtaposition seem to imply that history and geography do little in training the mind other than supplying some facts. The arrogant ignorance displayed here, perhaps unintentionally, has done gross injustice to these two disciplines. The disciplines of history and geography employ facts to study causes and effects, and to make informed decisions, train the mind for critical analysis, deduce relationships and postulate hypotheses. It also has the added demand of succinctness in the written language. Physical geography itself requires students to do both calculations and interpretations. The emphasis in the two disciplines advocates higher order thinking skills particularly since the last decade in our local educational system.

I do not think Dr Pang would be pleased to learn that uninformed people in mathematics think nothing much of the discipline beyond it being a mass of formulae and figures. As professionals in our own fields, I believe we need caution once we step into the boundaries of other disciplines, lest we be mistaken as bigots or ignoramuses.

Kok Lee Kwang (Ms)

I refer to the letter of Ms Kok, pointing out my indeed unintentional bigotry and arrogance, and professed ignorance. Besides offering my sincere apology to anyone offended by my article, I would like to bring out three points.

The fact is that I have studied both subjects, history and geography, in high school, but not beyond. History has remained my hobby although my interest in the subject is amateurish to say the least. It has perhaps been too long since I have thought about geography as a subject, and thus my ignorance really shows. The first point that I really want to make is that despite having studied history and geography for years in school, it is still impossible for me to appreciate their profundity. A similar inability to appreciate the profundity of mathematics is especially undesirable considering how much more time most students spend on it. Thus the anxiety and frustration the professional feels about the situation are shared by many of us. It is therefore the duty of the professional to attempt to make his or her field better understood, and I thank Ms Kok for doing so.

To explain why I have chosen history and geography as my contrast, I must say that I suspect that many students, like myself, have thoroughly enjoyed these subjects during their school years. Even those who have not, I think, can still appreciate how these subjects have to do with the real world. But perhaps the same could not be said about mathematics. One thinks of abstractness as a description of mathematics, but perhaps not of history or geography.

Finally, based on what little I know about history, may I still point out that I think there is a real difference between the disciplines of history and mathematics, namely, in the role of information collecting. It is highly unlikely for a mathematics lecturer to ask his or her student whether the reading has been done, the question would most probably take the form whether the problems have been attempted. However, besides such differences on the surface, one must bear in mind that knowledge acquisition in all academic subjects, whether arts or science, engineering or medicine, law or commerce, shares the same fundamental requisites: critical thinking, ingenuity, discipline and hardwork.

Peter Pang