Pure and Applied Mathematics: Confrontation or Interaction?!

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Abstract. The subject of comparing pure and applied sciences has long been discussed, and there have been different views on their interaction. In particular, this comparison has been in the spotlight by those who work in mathematics, and there are different ideas for convergence or confrontation of these two tendencies. Indeed, the question may be raised as to which one is the other prerequisite? Should pure mathematics be at the forefront of the applied one, and its direction be determined by applied research and industry needs? Or the problematic nature of knowledge requires that pure mathematics be developed as a product of free thought beyond its immediate applications, leading to expanding the frontiers of knowledge? In this talk, we first give a brief introduction to these two trends and ideas in describing the duties of pure and applied mathematicians. Then we will discuss the existing challenges (especially in Iran) and focus on the more comprehensive question: "Pure or applied mathematics? Or both?".

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