MATHEMATICAL INTUITIONS

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Mathematical intuitions are discussed and investigated in philosophy of mathematics as well as in mathematical education, though they are treated differently in both these domains. Philosophy of mathematics considers mathematical intuition as a major factor in the *context of discovery*. In the *context of justification* mathematical intuitions are confirmed by formal proofs. We propose to add a new context to these two, namely the *context of transmission*. It embraces our activities in learning and teaching mathematics, in popularizing it and in applications of mathematics in art. Our interest in this talk is focused mainly on learning and teaching. In these activities we try to grasp the meaning of mathematical notions, the nature of mathematical methods, proofs and procedures by collecting *intuitive explanations* associated with notions, methods, etc. in question. Intuitive explanations include references to language, perception, physical models, common day experience, and mathematical ideas grasped earlier. We will show examples of such explanations in the talk. We limit ourselves to remarks concerning mathematical education at the university level only and first of all to the students whose main subject of study is not mathematics itself. We dare to think about that activity as a kind of therapy which is supposed to overcome students' *math anxiety*.

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