Are Poincaré and Pollock two mathematical geniuses? Mathematics and its links with creation through intuition.

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Abstract:
What is the nature of mathematical reasoning? How mathematical reasoning can conclude something that was not present in your premises? If all the propositions which mathematics enunciates may be derived by the rules of formal logic, how is it that mathematics is not reduced to a gigantic tautology? We intend to show which arguments Poincaré prepares to overcome that classical problem and, meanwhile, intuition will appear as a fundamental concept in his philosophy of mathematics. Finally, we'll hypothesize if the recent studies of physicist Richard Taylor relating the work of Jackson Pollock 'drip period' with chaos theory can be explained by Poincaré's intuitionism.