

UNIVERSITY OF LONDON

MA PHILOSOPHY  
for Internal Students

PHILOSOPHY OF MATHEMATICS

Tuesday 14th September 1999  
10.00 – 13.00

Answer THREE questions

1. Can diagrams have any role in geometry other than to prompt or to illustrate geometrical statements?
2. Give a critical account of the Platonist view of mathematical objects.
3. “Numbers are multitudes of units.” Discuss.
4. Is there any mathematical knowledge that is neither analytic nor based on the evidence of the senses?
5. “We should believe true all and only those parts of mathematics that are indispensable to our best total empirical science.” Should we?
6. We know that there are trees in Gordon Square by seeing them. But how do we know that there is a set of trees in Gordon Square?
7. “A statement of number is an assertion about a concept.” Discuss.
8. Was Frege's philosophy of arithmetic refuted by Russell's paradox?
9. Explain the simple theory of types and assess it as an account of logical truth.
10. Give a critical account of Hilbert's programme, and of how it was affected by Gödel's incompleteness theorems.
11. Can established claims in mathematics ever be shown to be wrong?
12. Why do Intuitionists reject the Law of Excluded Middle? Are they right to do so?
13. How can we know about infinite numbers given that the human mind is finite?

14. Are mathematical theorems anything more than conventions?

15. “You may be convinced that the application of the proved proposition will turn up. But you do not understand the proposition so long as you have not found the application” (Wittgenstein). Discuss.

END OF PAPER