common the points α, β where L cuts V_3^2. With the conditions imposed it is clear that D must go through α (or β) and E through β (or α). . . . Suppose then that D goes through α and E through β. D and E are to be determined by the conditions that they shall be tangent to V_3^2 and such that the plane (DE) shall meet C_a, C_b, C_c respectively in one point. Consider now a fixed point a on C_a, and a point b on C_b. There are two V_3^1 going through a, b, α and tangent to V_3^2, and if c is the point other than α where one of them meets C_c, there are two V_3^1 tangent to V_3^2 and going through a, c, β. If b' is the point where one of them cuts C_b, it is seen at once that (b, b') are in (4, 4) correspondence, and for any of the 8 coincidences it is evident that we have two hyperplanes D, E which together with (A, B, C) form a system of the kind required.

It may be remarked in passing that

$$\prod_{i=1}^{i=4} x_i \sum_{k=1}^{k=4} \frac{a_k}{x_k} + x_5^3 = 0$$

represents a V_3^3 with four nodes of the second species, and is a mere generalization of the cubic surface with three such nodes represented by

$$x_1 x_2 x_3 + x_4^3 = 0.$$

We reserve for a later occasion the consideration of the special cases that may arise in the construction given above.

LINCOLN, NEB.,
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WHAT IS MATHEMATICS?

Principia Mathematica. By ALFRED NORTH WHITEHEAD and BERTRAND RUSSELL. Vol. I. Cambridge, 1910. Royal 8vo. xvi + 666 pp. $8.00.

THE game of chess has always fascinated mathematicians, and there is reason to suppose that the possession of great powers of playing that game is in many features very much like the possession of great mathematical ability. There are the different pieces to learn, the pawns, the knights, the bishops, the castles, and the queen and king. The board possesses certain possible combinations of squares, as in rows,