BOOK REVIEWS

Stencils for Solving $x^2 \equiv a$ (mod m). By Raphael M. Robinson. Berkeley and Los Angeles, University of California Press, 1940. 14 pp., 272 cards.

These stencils enable one to find directly all the solutions of the given congruence for $m \leqq 3000$. The range of m may be extended by additional computation.

In brief, the theory back of the construction is as follows: to solve the congruence we must find a y such that $a+my$ is a quadratic residue of all numbers E; that is, if m is prime to E, $a/m+y$ and m must have the same quadratic character (mod E) when the quadratic character for $E=16$ is the value of m (mod 8). It is not hard to see that we need consider only $y \leqq m/4$. Each card contains the numbers from 1 to 750, it is headed with a value of E (9, 16 or one of the seven primes from 5 to 23 inclusive), a value of a/m (mod E) and a quadratic character of m (mod E). Holes are punched in the values of y for which $a/m+y$ has the same quadratic character as m (mod E). Then to solve $x^2 \equiv a$ (mod m) one selects the cards appropriate to a and m for the nine values of E, stacks them and looks through the holes.

The stencils are very simple in principle and convert drudgery into fun.

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The Consistency of the Axiom of Choice and of the Generalized Continuum-Hypothesis with the Axioms of Set Theory. By Kurt Gödel. (Annals of Mathematics Studies, no. 3.) Princeton, University Press; London, Humphrey Milford and Oxford University Press, 1940. 66 pp. $1.25.

Abstract. In this study it is proved that the axiom of choice and Cantor's generalized continuum-hypothesis are consistent with the other axioms of set theory if these latter axioms are themselves consistent. The system Σ of axioms here adopted for set theory is essentially that of P. Bernays (Journal of Symbolic Logic, vol. 2, p. 65).

In Σ the primitive notions are: *class*, *set*, and the relation ϵ between class and class, class and set, set and class, or set and set. The first two axioms of Σ specify the relation between classes and sets: Axiom A1. Every set is a class. Axiom A2. Every class, which is a member of some class, is a set. As a consequence of this distinction between class and set, there exists a *universal class* V of all sets in the system Σ. The remaining axioms of Σ are of a form conventional in ordinary