define the sequence \( \{ a_n \} \) in which successive numbers with unequal cubes can be dissected into a unit square. One can dissect a rectangle into a unit square by the method of dissection described in [2].

In order to dissect a rectangle with unequal cubes, we have to dissect each cube into a unit square. A rectangle cannot be dissected into a unit square.

F. A. Rogers has given an upper bound for the two sizes (cf. [2, p. 14]).

Joint cubes, no two cubes having equal edges, cannot be dissected into a unit cube.

REFERENCES


Robert R. Kornhage: On a sequence of prime numbers.

In the research problem entitled Recursive function theory (Bull. Amer. Math. Soc. 69 (1963), 737), Mullin raises a series of questions concerning sequences generated by following Euclid's scheme of multiplying the numbers generated by Euclid's scheme to prove the infinitude of the primes. We address ourselves to the question, namely, whether or not the sequence generated in this manner, choosing at each step the highest prime factor, is monotone increasing. A short calculation on our IBM 7090 has shown that the sequence in question is 2, 3, 7, 43, 139, 50207, 340999, 3202139, 410353, \ldots, and hence is not monotone. In fact, an examination of the table of prime factors given below shows that there is no way to choose the prime factors to form a monotone sequence, since at each
Research Problems

Stage there is at most one possible choice, namely the highest prime factor.

<table>
<thead>
<tr>
<th>$n$</th>
<th>$P_n$</th>
<th>Prime Factors of $\prod_{i=1}^{n} P_i + 1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>43</td>
</tr>
<tr>
<td>4</td>
<td>43</td>
<td>13, 139</td>
</tr>
<tr>
<td>5</td>
<td>139</td>
<td>5, 50207</td>
</tr>
<tr>
<td>6</td>
<td>50207</td>
<td>23, 1607, 340999</td>
</tr>
<tr>
<td>7</td>
<td>340999</td>
<td>5521, 3202139</td>
</tr>
<tr>
<td>8</td>
<td>3202139</td>
<td>5, 53, 199, 410353</td>
</tr>
<tr>
<td>9</td>
<td>410353</td>
<td></td>
</tr>
</tbody>
</table>

In view of this result, it seems natural to add the following questions to those proposed by Mullin. (i) Are any, or all, of the sets generated in this manner and choosing the prime factor at each stage in any way recursive? (ii) Do any, or all, of these sets contain all of the prime numbers?

(Received December 20, 1963.)

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The Annual Meeting of the Mathematical Association of America was held at the University of Miami, Florida, on January 23–27, 1964. The society was housed at the University of Miami with the cooperation of the Everglades Hotel, which was 1493, including 1196 members.

The thirty-seventh Josiah Willard Gibbs Memorial Lecture was given by Professor Lars Onsager of Yale University on January 24, 1964. His lecture was titled "Cooperative Phenomena," and was introduced by Professor H. F. Busemann.

Professor Deane Montgomery of the University of New Hampshire delivered his retiring Presidential Address on the theme of "Mathematics and the Life Sciences" at 9:00 A.M. on Friday.

By invitation of the Committee on the National Meeting and Annual Meetings, hourly sessions were arranged. The following speakers were introduced by Professor J. H. Curtiss: Morton Brown, of the University of North Carolina; Professor H. F. Busemann, of the University of Oregon; Professor H. F. Busemann, of the University of Texas; and Professor H. F. Busemann, of the University of California.

Professor Hironaka spoke on "Singularities in Algebraic Geometry," and was introduced by Professor R. D. Gilbarg.

There were four special sessions for invited speakers, as follows: in geometry, organized by D. A. Buchsbaum and H. F. Busemann; in analysis, organized by D. A. Buchsbaum and H. F. Busemann; in partial differential equations with H. F. Busemann, Peter Lax, Ralph Phillips, and David Gilbarg.

There were 26 sessions for contributed papers, presided over by Casper Goffman, W. T. Goffman, B. L. Sanders, Donald P. Henrici, Edward Duda, Bill Hill, W. T. Kynor, Seymour Ginsburg, Donald Austin, E. H. Connell, R.
RESEARCH PROBLEMS


Let $L_N$ be the expected length of the longest cycle in a random permutation on $N$ letters, and let $\lambda_N = L_N/N$. (Thus, $\lambda_1 = 1$, $\lambda_2 = 3/4$, $\lambda_3 = 13/18$, $\lambda_4 = 67/96$, etc.) It is easily shown that the sequence $\{\lambda_N\}$ is monotonically decreasing, and hence a limit $\lambda$ exists. Computation has shown $\lambda = 0.62432965 \cdots$, but nothing is known of the relationship of $\lambda$ to other constants. What can be proved about the irrationality or transcendence of $\lambda$, and its relationship to classical mathematical constants? (Some nearby values unequal to $\lambda$ include $5/8, 1 - \epsilon^{-1}, (5^{1/2} - 1)/2, \text{and } \pi/5$.) (Received June 8, 1964.)

ERRATA

Robert R. Korfhage: Correction to 'On a sequence of prime numbers.'

It has been brought to my attention that because of the lack of an overflow check in the programming system used the factors listed for $n = 7$ are in error. Thus the value of $P_7$ is also wrong. Present knowledge indicates that probably $P_9 > P_8$, and thus Mullin's problem is still open. (Received July 16, 1964.)