Part three tabulates to 3D that zero of \( u \sin x - \cos x + e^{-ux} \) which lies between \( \pi \) and \( 2\pi \) for \( u = .1(.01).3(.02)2 \) and \( \sqrt{u} = 0(.02).5 \). The author states that the last figure should be correct to within 0.7 of a unit. Linear interpolation yields full accuracy and first differences are provided.

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MATHEMATICAL TABLES—ERRATA

In this issue references have been made to errata in RMT 1022, 1032.


The heading of page 294

\[
\begin{align*}
\text{for } E' &= 1.5629622295 \\
\text{read } E' &= 1.5631622295.
\end{align*}
\]

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Three tables are given in (1), on p. 172, 175, and 180, respectively. Table I, containing the function

\[
F_1(x) = 1 - (1 - x)e^{-x} + x^2 \text{Ei} (-x) = 1 - 2x^2 \int_{x}^{\infty} \frac{e^{-t}}{t} dt
\]

to 4D for \( x = 0(.01).02, .05, .1, .2(.2)1, 1.6(.4)2.4, 3, 4 \), was read against the same function given in (2) in complementary form on p. 1163, also to 4D mainly, for \( x = 0(.01).02, .05, .1(.1).0(.2)2.0, 2.4, 2.5, 3(1)5 \). The discrepancies, and the extra values given in (2), were checked, revealing the following errors in (1) and (2):

\[
\begin{array}{ccc}
(1) & F_1 & \text{for} & \text{read} \\
 & 0.4 & .4925 & .4854 \\
 & 3.0 & .9822 & .9821 \\
(2) & 0.3 & .6000 & .6001 \\
 & 0.9 & .2516 & .2514 \\
 & 1.2 & .1680 & .1679 \\
 & 1.4 & .1296 & .1292 \\
 & 1.6 & .1011 & .0998 \\
 & 1.8 & .0777 & .0774 \\
 & 2.5 & .0328 & .0326 \\
 & 4.0 & .00545 & .00552 \\
 & 5.0 & .00175 & .00176
\end{array}
\]

MATHEMATICAL TABLES—ERRATA
Table II, of the function

\[ F_2(x) = 2 \sum_{\nu=0}^{\infty} \left( \frac{-1}{\nu + 1} \right) (\nu + 1)^{p+1} x^\nu \]

was recomputed. The following values are in error:

<table>
<thead>
<tr>
<th>x</th>
<th>Original</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
<td>.8039</td>
<td>.8038</td>
</tr>
<tr>
<td>4.0</td>
<td>.8863</td>
<td>.8864</td>
</tr>
<tr>
<td>5.0</td>
<td>.9289</td>
<td>.9232</td>
</tr>
</tbody>
</table>

Table III gives

\[ F_\kappa = 1 - \int_0^{\kappa/2} e^{-t} \cos \theta \cos \kappa \sin \theta \cos \kappa \theta dt = \frac{1}{2} \pi [I_1(x) - L_1(x)], \]

where \( I_1 \) and \( L_1 \) are Bessel and Struve functions of imaginary argument. Comparison with (3) indicated one error in (1)

\[ x = 4 \quad \text{for} \quad 9281 \quad \text{read} \quad 9271 \]

and two in (3)

\[ \mu = 0.8 \quad \text{for} \quad 0656 \quad \text{read} \quad 0671 \]
\[ 1.2 \quad \text{for} \quad 0039 \quad \text{read} \quad 0045 \]

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This edition gives on p. 9 a more extensive table of the maxima and minima of the sine integral, that is, \( \sin(x) \) for \( x = \pi(x)24\pi \). Comparing these values with those obtained from interpolating in the NBS tables we find the seven errata:

<table>
<thead>
<tr>
<th>( \pi^{-1}x )</th>
<th>Original</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>-0.007673</td>
<td>-0.017673</td>
</tr>
<tr>
<td>19</td>
<td>+0.006744</td>
<td>+0.016744</td>
</tr>
<tr>
<td>20</td>
<td>-0.005907</td>
<td>-0.015907</td>
</tr>
<tr>
<td>21</td>
<td>+0.005151</td>
<td>+0.015151</td>
</tr>
<tr>
<td>22</td>
<td>-0.004463</td>
<td>-0.014463</td>
</tr>
<tr>
<td>23</td>
<td>+0.003834</td>
<td>+0.013834</td>
</tr>
<tr>
<td>24</td>
<td>-0.008258</td>
<td>-0.013258</td>
</tr>
</tbody>
</table>

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On p. 239 the entry immediately to the right of 6.3 in the \( x \) column should be shifted down one line. Thus \( -H_1^{(1)}(i6.30) = 0.046170 \). The first significant figure of the function does not change from 6 to 5 until \( x \) is between 6.32 and 6.33.

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\[
\begin{array}{ccc}
x & \text{for } m & \text{read} \\
6944 & 61 & 37 \\
10006 & 149 & 83 \\
23926 & 47 & 17 \\
31004 & 73 & 67 \\
\end{array}
\]

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UNPUBLISHED MATHEMATICAL TABLES

In this issue there is a reference to an unpublished table in RMT 1041.

150[F].—D. D. Wall, Table of Wilson's Quotient. 11 leaves tabulated from punched cards. Deposited in the UMT File.

For each of the 709 primes \( p \leq 5381 \) the table gives the least positive remainder on division of \( \{(p - 1)! + 1\}/p \) by \( p \). This remainder is zero for \( p = 5, 13, \) and 563. The table was produced on the IBM Card Programmed Calculator. [See also MTAC, v. 5, p. 81, MTE 182.]

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AUTOMATIC COMPUTING MACHINERY

Edited by the Staff of the Machine Development Laboratory of the National Bureau of Standards. Correspondence regarding the Section should be directed to Dr. E. W. Cannon, 415 South Building, National Bureau of Standards, Washington 25, D. C.

DISCUSSIONS

ASYNCHRONOUS SIGNALS IN DIGITAL COMPUTERS

It is frequently necessary, during the operation of a digital computer, to inject signals from sources that are not synchronized with the computer itself, for example, the manual signals. This operation may be initiated by pressing an appropriate push button. In this discussion, we will not be concerned with such problems as "bounce" of contacts, wavering pressure or the possibility of repeated operation because of completion of computation before the button is released, but only with the fact that the contact is made (or broken) at a random moment with respect to the computer timing pulses or "clock." Probably the most important source of automatically generated signals asynchronous with the computer proper is the input equipment. Whether data are introduced by magnetic tape, punched cards, manual keyboard or other means, it is generally introduced at a much lower rate than transfers within the computer itself and at intervals which do not synchronize with the main "clock."