$$6\,76039x^{12} = 52003P_0 + 2\,08012P_2 + 2\,20248P_4 + 1\,33952P_6 + 50048P_8 + 10752P_{10} + 1024P_{12}$$

$$13\,00075x^{13} = 2\,60015P_1 + 4\,28260P_3 + 3\,54200P_5 + 1\,84000P_7 + 60800P_9 + 11776P_{11} + 1024P_{13}$$

$$50\,14575x^{14} = 3\,34305P_0 + 13\,76550P_2 + 15\,64920P_4 + 10\,76400P_6 + 4\,89600P_8 + 1\,45152P_{10} + 25600P_{12} + 2048P_{14}$$

$$96\,94845x^{15} = 17\,10855P_1 + 29\,41470P_3 + 26\,41320P_5 + 15\,66000P_7 + 6\,34752P_9 + 1\,70752P_{11} + 27648P_{13} + 2048P_{15}$$

$$3005\,40195x^{16} = 176\,78835P_0 + 744\,37200P_2 + 893\,24640P_4 + 673\,17120P_6 + 352\,12032P_8 + 128\,88064P_{10} + 31\,74400P_{12} + 4\,75136P_{14} + 32768P_{16}$$

$$5834\,01555x^{17} = 921\,16035P_1 + 1637\,61840P_3 + 1566\,41760P_5 + 1025\,29152P_7 + 481\,00096P_9 + 160\,62464P_{11} + 36\,49536P_{13} + 5\,07904P_{15} + 32768P_{17}$$

$$22687\,83825x^{18} = 1194\,09675P_0 + 5117\,55750P_2 + 6408\,07200P_4 + 5183\,41824P_6 + 3012\,58496P_8 + 1283\,25120P_{10} + 394\,24000P_{12} + 83\,14880P_{14} + 10\,81344P_{16} + 65536P_{18}$$

$$44181\,57975x^{19} = 6311\,65425P_1 + 11525\,62950P_3 + 11591\,49024P_5 + 8196\,00320P_7 + 4295\,83616P_9 + 1677\,49120P_{11} + 477\,38880P_{13} + 93\,96224P_{15} + 11\,46880P_{17} + 65536P_{19}$$

$$3\,44616\,32205x^{20} = 16410\,30105P_0 + 71349\,13500P_2 + 92468\,47896P_4 + 79149\,97376P_6 + 49967\,35744P_8 + 23893\,30944P_{10} + 8619\,52000P_{12} + 2285\,40416P_{14} + 421\,72416P_{16} + 48\,49664P_{18} + 2\,62144P_{20}$$

$$6\,72822\,34305x^{21} = 87759\,43605P_1 + 1\,63817\,61396P_3 + 1\,71618\,45272P_5 + 1\,29117\,33120P_7 + 73860\,66688P_9 + 32512\,82944P_{11} + 10904\,92416P_{13} + 2707\,12832P_{15} + 470\,22080P_{17} + 51\,11808P_{19} + 2\,62144P_{21}$$

$$26\,30123\,70465x^{22} = 1\,14353\,20455P_0 + 5\,03154\,10002P_2 + 6\,70872\,13336P_4 + 6\,01471\,56784P_6 + 4\,05955\,99616P_8 + 2\,12746\,99264P_{10} + 86835\,50720P_{12} + 27224\,10496P_{14} + 6354\,69824P_{16} + 1042\,67776P_{18} + 107\,47904P_{20} + 5\,24288P_{22}$$

$$51\,45894\,20475x^{23} = 6\,17507\,30457P_1 + 11\,74026\,23338P_3 + 12\,72343\,70120P_5 + 10\,07427\,56400P_7 + 6\,18702\,98880P_9 + 2\,99582\,49984P_{11} + 1\,14059\,61216P_{13} + 33578\,80320P_{15} + 7397\,37600P_{17} + 1150\,15680P_{19} + 112\,72192P_{21} + 5\,24288P_{23}$$

$$806\,19009\,20775x^{24} = 32\,24760\,36831P_0 + 143\,32268\,30360P_2 + 195\,70959\,47664P_4 + 182\,38170\,12160P_6 + 130\,09044\,42240P_8 + 73\,46283\,90912P_{10} + 33\,09136\,89600P_{12} + 11\,81107\,32288P_{14} + 3\,27809\,43360P_{16} + 68380\,26240P_{18} + 10103\,02976P_{20} + 943\,71840P_{22} + 41\,94304P_{24}$$

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A New Approximation to π

(conclusion)

In *MTAC*, v. 2, p. 320, it was announced that the values of π and $\tan^{-1}\frac{1}{5}$, in our previous joint article with Mr. Smith, p. 245–248, called for correction beyond 722D. We are now in a position to guarantee the accuracy of our 808D values of π, $\tan^{-1}\frac{1}{5}$, $\tan^{-1}\frac{1}{239}$, $\tan^{-1}\frac{1}{4}$, $\tan^{-1}\frac{1}{20}$, and $\tan^{-1}\frac{1}{1985}$.

This certainty was achieved by Mr. Ferguson carrying through his calculations to 812D, with the independent formula which he had been using. In this way he discovered certain errors in the work of Dr. Wrench.

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Dr. Wrench independently discovered another error in his work. Thus 12 digits have to be changed in the previously published value of π in the interval 721D–808D. The correct sequence is as follows:

π =	.....	.....	.....	.....	86403	44181	59813	62977	47713	09960
	51870	72113	49999	99837	29780	49951	05973	17328	16096	31859
	50244	594(55)								

The corrected sequence in $\tan^{-1}\frac{1}{5}$, 721D–808D is as follows:

.....	.....	.....	.....	40468	13622	41107	68081	00362	13759
92595	89071	66648	51452	55706	79954	88100	43132	95466	83892
29036	883(09)								

There is no change to be made in Mr. Smith's previously published values of $\tan^{-1}\frac{1}{239}$ to 811D or in Mr. Ferguson's (a) $\tan^{-1}\frac{1}{4}$, (b) $\tan^{-1}\frac{1}{20}$, (c) $\tan^{-1}\frac{1}{1985}$, each to 710D. We add, however, Mr. Ferguson's values of (a), (b), and (c) 711D–808D.

(a)	.....	.....	59314	07269	83047	72505	80573	53263	40402	52936
	68088	15266	48595	21663	12393	77666	38170	19070	41862	22868
	53718	412(24)								
(b)	.....	.....	66995	11975	27660	30938	09302	51266	37651	02972
	47760	03233	34506	66330	41815	96327	61997	38784	39560	96639
	31126	113(14)								
(c)	.....	.....	35385	21705	44797	37589	88930	29687	78069	65707
	60943	18995	57207	68639	53447	83160	99985	33336	38876	42719
	95279	798(75)								

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RECENT MATHEMATICAL TABLES

450[A, B, C, D].—DONALD V. MITCHELL, (a) *Six-Place Tables for Precision Computing to accompany* [b] *Streamlined Methods of Computing with Slide Rule and Mathematical Tables* (a) 1945, 47 p., stiff paper cover $1.00; [b] revised and greatly enlarged ed., 1947, 80 p., stiff paper cover $1.00, Seattle, Washington, Craftsman Press. 13.5 × 20.5 cm. Procurable from the author, 12345 Sand Point Way, Seattle 55, Wash.

The tables are: Log N, N = 1000–9999, with Δ; the six natural trigonometric functions and their logarithms for each tenth of a degree, with c.d.; decimal equivalents of common fractions; N^2, N^3, $N^{\frac{1}{2}}$[4D], $N^{\frac{1}{3}}$[4D], $N = 1(1)1000$. The "Slide Rule Topics" in [b] occupy p. 37–58.

451[A, D].—FRIEDRICH SCHULZE, *Hilfstafeln für die Schrägmessung mit 5 m-Latten und mit dem 20 m. und dem 10 m-Stahlband.* Liebenwerda, Verlag von R. Reiss, 1941 (?) 23 p. 14 × 16 cm. Limp cover. 50 pfennige.

T. 1, arctan $(h/5)$, $h = .1(.01)2.09$, to the nearest 0′.1.
T. 2–3, $Z = (25 - h^2)^{\frac{1}{2}} - 5000$, and $0.2Z$, $h = .1(.01)2.09$, h in m. and Z in mm.
T. 4–5, $r = 5000 - 25/(25 + h^2)^{\frac{1}{2}}$ and $0.2r$, $h = .1(.01)2.09$.
T. 6–7, $Z = 20(\sec\alpha - 1)$ and $0.05Z$, $\alpha = 0(0°.1)24°.9$.
T. 8–9, $r = 20(1 - \cos\alpha)$ and $0.05r$, $\alpha = 0(0°.1)24°.9$.

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